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Is Self-Other Overlap a Malleable Predictor of Willingness to Work with People with Disability?

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Abstract

Nearly 1 in every 5 Americans have some form of disability, creating a high demand for professionals who are interested in working with people with disability (PWD). However, many people are uncomfortable working with PWD, or are unwilling to put in the additional effort that may be necessary to meet their needs. As a result, PWD face many barriers when seeking services. Interventions to address this issue typically focus on changing attitudes or increasing empathy. While these components influence people's behavior in the short-term, they do not completely account for the variability in people being willing to make sacrifices to put in additional time and effort to meet the needs of PWD. Given that feeling close and connected to a group of people makes a person more willing to go out of their way to help a member of that group (e.g., neighbors, family members, classmates), this work explored the association between self-other overlap and willingness to work with PWD. Across 3 studies, self-other overlap was uniquely associated with students' willingness to work with PWD as part of one's profession, even when controlling for attitudes and empathy. The main effects from a fourth study indicated self-other overlap-based enhanced brief intervention did not result in significant improvements in self-other overlap, compared to the other conditions. However, more work will be needed to verify this finding and address more conclusively whether self-other overlap is malleable to intervention in this context.

IS SELF-OTHER OVERLAP A MALLEABLE PREDICTOR OF WILLINGNESS TO WORK WITH PEOPLE WITH DISABILITY?

by

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People with disability (PWD) are considered disabled because some aspect of their self functions in a way that is different from others, impacting their ability to care for themselves or fully participate in society in the same way as most other people (World Health Organization, 2017). Given their different abilities, and, in some cases, their reliance on assistance or accommodation, people with disability often rely on others both for direct support and for the creation of enabling environments to meet their needs (Drum, Krahn, & Bersani, 2009). For children, support may come largely from parents and other family members, but as people with disability move through the educational system and into adulthood, this support and assistance often needs to come from other adults as either a focus of, or as part of, their professional work (e.g., physical therapists, interpreters, personal care assistants, medical office receptionists, architects; Drum et al., 2009). This means it is crucial for professionals to be willing to work with PWD, and for people to pursue careers that focus on supporting people with disability. However, working with PWD is often characterized as intimidating and challenging because it can take time, effort, and a willingness to work with people to overcome unique challenges (Wilkinson, Dreyfus, Cerreto, & Bokhour, 2012). Additionally, many people feel uncomfortable working with people with disability because they seem so different from themselves (Karl, McGuigan, Withiam-Leitch, Akl, & Symons, 2013; Satchidanand et al., 2012). The combination of people with disability being seen as both costly to work with and fundamentally different from themselves creates substantial barriers to motivating people to work with this portion of the population (Drum et al., 2009).

Given the immutable nature of the costs associated with accommodation (National Council on Disability, 2007), many interventions directed toward professionals during their education and training focus on changing attitudes or increasing empathy in an attempt to make them more willing to serve people with disability (Crossley, 2015; Hubbard, 2004; Shakespeare, Iezzoni, & Groce, 2009; Shakespeare & Kleine, 2013). However, focusing on these components does not address the fact that working with PWD can require more time and effort than working with people without disability. Thus, committing oneself to working with this population is not just about seeing a group of people in a positive light, or being able to connect with them emotionally. It is about being willing to make some level of self-sacrifice to expend the extra effort that may be necessary to work with PWD. Framed in this way, factors associated with prosocial behavior directed by individuals towards a group of people may provide additional insight into individuals' willingness to work with PWD.

Four studies were conducted exploring the association between self-other overlap (SOO) and willingness to work with people with disability as part of one's profession. Self-other overlap was selected as the target factor associated with prosocial behavior in this work because it utilizes a visual analogue scale consisting of seven pairs of circles progressively increasing in their degree of overlap (Aron, Aron, & Smollan, 1992; Aron, Aron, Tudor, & Nelson, 1991; Aron & Fraley, 1999) to provide a simple and efficient method for capturing a complex sense of a person's overall perception of closeness, similarity, and integration with respect to a group of people (Otten & Epstude, 2006; Schubert & Otten, 2002; Tropp & Wright, 2001). Additionally, this particular visual scale has empirically been shown to be uniquely associated with expressing long-term prosocial helping behavior toward targets identified as having high levels of overlap with the self (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997; Neuberg et al., 1997). It was

hypothesized that across the first three studies, self-other overlap ratings would be uniquely associated with students' willingness to work with PWD as part of one's career, even when controlling for attitudes and empathy. Additionally, it was hypothesized that Study 4 would provide initial support for ratings of self-other overlap being malleable to brief intervention.

Situating this Work in Context

There is a high level of need for professionals to work with people with disability. Nearly 1 in every 5 Americans, or nearly 60 million people in the United States, have some form of disability (Reagan-Steiner et al., 2015), and 1 in every 3 American adults report difficulty with performing basic (e.g., movement, sensory, emotional, cognitive) and/or complex (e.g., living independently, working, maintaining a household, participating in social activities) tasks (Brault, 2012; Drum et al., 2009). However, many professionals try to avoid working with this portion of the population because it typically requires additional time and effort, and often does not provide additional compensation. For example, physicians are required by law (i.e., the American with Disabilities Act) to provide a sign language interpreter for their patients who communicate using sign language at no cost to the patient. In practice, this means that office visits with patients who are Deaf have a lower profit margin and may end up taking longer than office visits with other patients. Thus, physicians who choose to work with patients with disability often must consciously accept added responsibilities (e.g., scheduling interpreters, scheduling rooms with accessible equipment, coordinating with transportation schedules that may be out of the patient's control), with the only real benefit being that they are providing a necessary service for members of their community. While healthcare provides some of the most concrete examples of the demands placed on professionals who work with people with disability because of the level of

specialization and the formal regulations imposed on this field, people in other service provision professions (i.e., teachers, social workers, transport drivers) have similar experiences.

Many interventions have been developed to increase the number of people who appropriately meet the needs of people with disability during the course of their work. One approach has been to implement training programs, workshops, webinars, and other educational opportunities to increase professionals' ability to "competently" or "sensitively" meet the needs of people with disability (Duggan, Bradshaw, Carroll, Rattigan, & Altman, 2009; Long-Bellil et al., 2011; Shakespeare et al., 2009). Another, less common approach, has been to implement programs to increase the number of people who are specializing primarily in working with people with disability as part of their training programs. Many of these programs have focused on recruiting people to work with older adults and people with mental health issues (Brown, Barnes, Silver, Williams, & Newton, 2016; Cummings, Adler, & DeCoster, 2005; Wang & Chonody, 2013; Wigney & Parker, 2008). For example, social work training programs have modified their curriculums to include more content focused on the needs of older adults, and their field experience opportunities include more interactions with older adults (Cummings et al., 2005). Additionally, the specialty of psychiatry has proactively sought to recruit medical students into their residency programs. These programs offer medical students paid summer clinical externship programs and funding to cover expenses to attend conferences in order to entice them to spend time learning about the field, interacting with the patients who receive psychiatric care, and exploring it as a potential residency option (Wigney & Parker, 2008).

Historically, interventions geared towards influencing people's willingness to work with people with disability have focused on: increasing people's awareness of the challenges faced by people with disability, changing people's attitudes towards people with disability, improving the

accessibility of the physical environment, and providing people with techniques to help them be more accommodating in service delivery (Jones, McQueen, Lowe, Minnes, & Rischke, 2015). This emphasis primarily on knowledge, attitudes, and skills, is reflected in the large number of journal articles focusing on educating service providers about disability issues and enhancing their communication skills as ways to change their explicit attitudes towards people with disability (Fredheim, Haavet, Danbolt, Kjønsberg, & Lien, 2013; Kahtan, Inman, Haines, & Holland, 1994; Satchidanand et al., 2012; Tervo, Azuma, Palmer, & Redinius, 2002). Given the public health and clinical training backgrounds of many of the intervention designers, this focus makes sense because of the emphasis many common health behavior change models place on knowledge, attitudes, and skills/self-efficacy (Bandura, 1986; Prochaska & Velicer, 1997; Skinner, Tiro, & Champion, 2015). However, these interventions have still fallen short of meeting their objectives, with only meager changes reflected in practice and no consensus on the key program factors that result in practice change (Fredheim et al., 2013; Horvat, Horey, Romios, & Kis-Rigo, 2014; Kahtan et al., 1994; Shakespeare et al., 2009).

More recently, interventions have tried to make more substantial gains by focusing on developing "cultural competence" and utilizing techniques driven by work on prejudice reduction (e.g., Crisp & Turner, 2009; Ensari, Christian, Kuriyama, & Miller, 2012; Plant, Devine, & Peruche, 2010; Turner, Hewstone, & Voci, 2007). These interventions differ from the ones based on health behavior change models by focusing more on developing a holistic view of individuals with disability, and increasing empathy for people with disability (Hubbard, 2004; Symons, McGuigan, & Akl, 2009; Symons, Morley, McGuigan, & Akl, 2014). The components of these interventions include a combination of learning about individuals with disability and the diversity among them, developing shared understanding, practicing perspective-taking, and even

facilitating interactions between service providers and PWD. The underlying premise is that seeing people with disability more as individuals, and developing a better understanding of their feelings and experiences, will help service providers better understand and meet their needs. There is also the notion that feeling empathetic towards PWD will motivate helping this group of people. Indeed, these interventions have been shown to be more effective than the ones primarily focused on knowledge and attitudes (Symons et al., 2014; Tervo & Palmer, 2004). However, there are still people who complete these training programs who do not change in their orientation towards people with disability, and some people who even experience a negative shift in their orientation towards working with people from this group (Khandelwal & Workneh, 1987; Symons et al., 2014). Thus, it is possible there is a piece missing from the current understanding of the key psychological components underlying this process.

Inclusion of the Other in the Self & Long-Term Helping

As highlighted by the debate between Batson et al. (1997) and Cialdini et al. (1997; Neuberg et al., 1997), and subsequent work, the mechanisms underlying the expression of helping behavior are influenced by the magnitude of the investment and the time scale (Neuberg et al., 1997; Penner, Dovidio, Piliavin, & Schroeder, 2005). In any given moment, empathy, emotion, perceptions, and social pressure are likely the best predictors of helping behavior, especially when helping can be completed in a relatively short time-frame with one discrete action (Penner et al., 2005). However, when helping requires a larger investment over a longer period of time, especially with the expression of repeated actions, egoistic-interests become much stronger predictors of helping behavior (Penner et al., 2005). This is where the sense of self-other overlap, or the inclusion of the other in the self, comes into play as a key factor in directing helping behavior, especially with respect to helping behavior directed towards an

apparent outgroup member (Sturmer, Snyder, Kropp, & Siem, 2006; Stürmer, Snyder, & Omoto, 2005). As demonstrated by the work of Cialdini et al. (1997; Neuberg et al., 1997), it is easy for people to agree to spend an afternoon taking someone who was evicted around to look for a new place to live. However, it is harder to agree to have someone come and live with them because the levels of investment and self-sacrifice are much different. If the person who is evicted is a close friend or family member however, it is easier for people to agree to have them than if they are distant acquaintance or stranger (Cialdini et al., 1997; Neuberg et al., 1997). In both cases, people likely feel bad for the person and want to help him, especially if he seems to be in need or deserving of help, but self-interests influence whether help is actually provided. People are more willing to help others they see as being like themselves. This highlights the role of the inclusions of the other in the self in the expression of prosocial behavior.

Inclusion of the other in self is a concept that represents the way people construe others with whom they feel close and connected. The self-other overlap scale (Aron et al., 1992; Aron & Fraley, 1999) uses a visual representation of closeness to capture the way people construe themselves with respect to a target using progressively overlapping circles. The more the circles representing the self and the other overlap, the greater the feelings of closeness between themselves and the target (Aron et al., 1992; Aron & Fraley, 1999). It has been shown that reporting high levels of self-other overlap with a target captures a combination of both subjectively feeling close and objectively being close (i.e., frequency of contact, diversity of contact; Aron et al., 1992). Thus, self-other overlap is not just influenced by thoughts and feelings related to the target group, but also by intergroup contact (Cameron, Rutland, Brown, & Douch, 2006; Vezzali, Stathi, & Giovannini, 2012).

Mechanistically, the people with whom individuals feel the greatest overlap are seen and treated more like the individuals treat themselves than people with whom they see and feel less overlap (Aron et al., 1992, 1991; Aron & Fraley, 1999). This sense of closeness then has an impact on individuals' willingness to help the target, such that the people to whom individuals feel the closest and see most like themselves (e.g., friends, family members, neighbors) are the ones they are most likely to help in an investment-heavy way. Evolutionary psychologists suggest that this process is driven by a biological desire to ensure the survival of our genetic material through kin selection (Burnstein, Crandall, & Kitayama, 1994; Cunningham, 1986; Rushton, 1989). The underlying logic is that, historically, the ones individuals felt the closest to, and had the most frequent, diverse, and emotionally intimate relationships with, would have been our family members. Thus, this mechanism would have directed long-term helping behavior and investment towards the people who are most genetically similar to ourselves. Other psychologists suggest this association between overlap and helping is driven by an expectation of reciprocity, with people who feel closer to us or who seem more like us, being more likely to help us in the future than people who feel less close to us or are less like us (Maner & Gailliot, 2007; Myers, Laurent, & Hodges, 2014). Regardless of the basis for this mechanism, there is clear empirical evidence that people feel most driven to support others who they feel close to and see most like themselves, especially when helping requires a long-term investment (Cialdini et al., 1997; Neuberg et al., 1997). This matches-up well with the colloquial sense of feeling a "calling" to work to help a specific group of people one feels close and connected to because they see the people in the group as being like them.

Connecting Self-Other Overlap to Working with People with Disability

One key way that working with people with disability is different than working with other groups of people (e.g., females, adults 25-35 years of age, school teachers) is that, on an average, providing a service for people with disability requires planning and effort that is greater than most other groups of people. Therefore, making a conscious choice to work with this group is not just about thinking positively about them, knowing their needs, and having the skills to meet them. It is also about being willing to invest putting in more to the interaction and getting out less, at least in terms of monetary reimbursement, in return. This component of the dynamic suggests there is at least a part of this choice that is motivated by prosocial thoughts.

Conceptualizing working with people with disability as a long-term prosocial helping behavior provides a frame that can be used to evaluate the potential limitations of techniques employed by interventions to promote working with people with disability. For example, a curriculum change was implemented at a medical school in an attempt to enhance students' attitudes and skills related to working with patients with disability (Symons et al., 2014). This curriculum change included many elements intended to reduce prejudice and change behavior, including: integrating the changes across all four years of medical school, raising awareness of disability-related issues, having small-group interactions with people with disability, and having clinical skill practice sessions include people with disability (Symons et al., 2014). However, all of these experiences and interactions were couched in the context of *learning about people with disability*, emphasizing the difference between the medical students and people with disability, and the difference between people with disability and the rest of their patients. Viewing this study from the perspective of self-other overlap helps to reinforce the authors' assertion that some students ended-up having more negative feelings towards patients with disability after the

intervention because patients with disability were seen as being even more different than other patients (Symons et al., 2014). Thus, while this intervention may have been well suited to address attitudes, knowledge, and skills, it was missing elements that would have enhanced feelings of closeness between the medical students and people with disability.

Interventions that have demonstrated the most success in recruiting professionals to work with people with disability incorporate activities that increase individuals' sense of closeness (Cummings et al., 2005; Curl, Larking, & Simons, 2005; Karl et al., 2013). These activities include facilitating social interactions with people with disability outside of the work context, or extended periods of time working with PWD (Crotty, Finucane, & Ahern, 2000; Iezzoni & Long-Bellil, 2012; Shakespeare et al., 2009; Symons et al., 2009, 2014). The success of these interventions is often attributed to changes in participants' attitudes toward people with disability or feelings of empathy. However, some interventions targeting attitudes and empathy have not had consistently positive results (Symons et al., 2014). Thus, overlooking the contribution of influencing closeness may result in the literature appearing more inconsistent than it actually is.

The Current Work

The current work was comprised of four studies that explored the association between self-other overlap and willingness to work with people with disability. Study 1 provided an initial test of the association between self-other overlap and willingness to work with people with disability. Study 2 provided an opportunity to replicate the findings of Study 1 and investigate whether self-other overlap is a unique predictor of willingness to work with people with disability, controlling for attitudes and empathy. Study 3 investigated whether the association between self-other overlap and willingness to work with people with disability is generalizable to

other groups. Finally, Study 4 investigated whether self-other overlap can be increased by a brief intervention. Overall, these four studies aimed to test two hypotheses:

Hypothesis 1 (H1): Self-other overlap is a unique predictor of willingness to work with people with disability.

Hypothesis 2 (H2): Completing a brief intervention that frames disability in the context of friends, family, and classmates, results in higher ratings of self-other overlap than completing brief interventions that do not utilize this frame.

Study 1

This study provided an initial test of the first hypothesis (H1) by evaluating whether an association exists between ratings of self-other overlap and willingness to work with people with disability. Willingness to work with people with disability was operationalized in two ways: 1. the extent to which a person is open to working with PWD as part of one's future career, and 2. the likelihood of working primarily with PWD as part of one's future career. Self-other overlap was predicted to be positively associated with both measures of willingness to work with PWD as part of one's future career. It was anticipated that these associations would exist even after controlling for age and sex. The contributions of age and sex were evaluated because previous studies have found that women and people who are older have more positive attitudes toward people with disability (Paris, 1993; Tervo et al., 2002; Tervo & Palmer, 2004).

Method

Procedure

For this study, participants completed 9 brief survey questions near the end of two social psychology studies investigating other constructs. The survey questions captured demographic

information, self-other overlap with PWD, openness to working with PWD, and likelihood of working primarily with PWD.

Participants

Overall, there were 624 undergraduates[1] recruited from the Psychology Department participant pool who completed the study items. The overall sample was 70.5% freshman (n = 440; 19.2% sophomore, 4.3% junior, 5.4% senior, and .5% other) and 63.5% female (n = 396), with ages ranging from 18-30 (*M* = 18.71, *SD* = 1.29).[2]

Measures

Self-Other Overlap with People with Disability. The Inclusion of Other in the Self Scale (Aron, Aron, & Smollan, 1992) was modified to assess participants' self-reported ratings of self-other overlap with people with disability. Participants were asked to select the pair of circles that best represents their relationship with PWD. Each of the 7 pairs of circles represented different levels of overlap between the self and PWD (see Appendix A), with circles representing higher levels of overlap being associated with higher scale values (1 = two non-overlapping circles, 7 = two almost completely overlapping circles). The modifications made to the original Inclusion of Other in the Self Scale (Aron, Aron, & Smollan, 1992) item were based on similar changes to the label of the target used in previous work to assess self-other overlap both with

[1] A priori power analyses were conducted using G*Power 3.1. The *F* tests were specified as the test family, and the statistical test was specified as *linear multiple regression (fixed model, R^2 increase)*. The input parameters were: partial R^2 = .05 (effect size f^2 = .05263), α-error probability = .05, Power (1 – β-error probability) = .80, number of tested predictors = 3. This analysis determined 220 participants would provide sufficient power (power = 0.80) to detect the effect of a predictor with a partial R^2 of .05. This partial R^2 was selected as the cut-off because a predictor that explains less than 5% of the variance in a linear regression model above the variance explained by the other predictors seemed to lack practical significance and warrant further exploration. Based on the obtained sample size and the a priori power calculations, this study was deemed to be sufficiently powered to test for the hypothesized associations.

[2] The overall sample was created by combining the responses of the two samples obtained from the two studies (A & B) that integrated these questions into their surveys. Study A provided a total of 212 participants who were 72.6% freshman (n = 154; 16.0% sophomore, 4.2% junior, 6.6% senior, and .5% other) and 63.7% female (n = 135; 36.3% male), with an age range of 18-30 (*M* = 18.85, *SD* = 1.54). Study B provided a total of 412 participants who were 69.4% freshman (n = 286; 20.9% sophomore, 4.4% junior, 4.9% senior, and .5% other) and 63.3% female (n = 261; 36.7% male), with an age range of 18-30 (*M* = 18.64, *SD* = 1.13).

individuals (Aron et al., 1992; Cialdini et al.,1997; Manner et al., 2002) and groups (Tropp & Wright, 2001; Schubert & Otten, 2002).

Openness to Working with People with Disability. Openness to working with people with disability was assessed by asking participants to use a slider to indicate their extent of openness to working with PWD as part of their future career. The slider allowed participants to provide their response on a 101-point scale (0 = *Not at All Open*, 100 = *Very Open*; see Appendix B).

Likelihood of Working Primarily with People with Disability. Likelihood of working primarily with people with disability was assessed by asking participants to use a slider to indicate the extent to which they are likely to work primarily with PWD as part of their future career. The slider allowed participants to provide their response on a 101-point scale (0 = *Not at All Likely*, 100 = *Very Likely*; see Appendix C).

Age. Age was assessed by allowing participants to type a number into a textbox.

Level in College. Level in college was assessed by allowing participants to select one of 5 options (1 = *Freshman*, 2 = *Sophomore*, 3 = *Junior*, 4 = *Senior*, 5 = *Other*). Participants who selected "Other" were as to provide more information in a textbox.

Sex. Sex was asses by allowing participants to select either male (0) or female (1).

Study 1 Results

Overall Study Descriptive Statistics

Table 1 provides the means and standard deviations for participants' ratings of self-other overlap, openness to working with people with disability, and likelihood of working primary with PWD as part of their career. The mean for likelihood of primarily working with PWD (M = 37.53, SD = 28.72) is 28 points lower than the mean for openness to working with PWD (M =

65.56, *SD* = 28.39). Differences between the means for samples A and B were tested using independent samples *t*-tests. There was a statistically significant difference ($p = .05$) between sample A ($M = 68.69$, $SD = 28.23$) and sample B ($M = 63.97$, $SD = 28.37$) with respect to ratings of openness to working with people with disability. However, the overall pattern of the findings of the following analyses do not change if they are run separately with each sample.

Table 2 provides the bivariate correlations for the study variables. As predicted, there was a positive association between self-other overlap and self-reported openness to working with people with disability ($r = .400$, $p < .05$). Additionally, as predicted, there is a positive association between self-other overlap and self-reported likelihood of primarily working with PWD ($r = .374$, $p < .05$). Figure 1 and Figure 2 provide boxplots comparing participants' responses to either the openness to working with PWD item or the likelihood of working primarily with PWD item, and their responses to the self-other overlap item. These figures highlight the pattern of relationship, with increasing levels of self-other overlap are generally associated with higher mean levels of each of the willingness measures.

Self-Other Overlap as a Predictor of Openness to Working with People with Disability

To further examine the association between self-other overlap and openness to working with people with disability, a hierarchical multiple regression analysis was performed (see Table 3). For this analysis the individual trait factors of sex and age were entered into the first step of the model to evaluate their ability to predict openness to work with PWD. The overall model was significant ($F(2, 618) = 4.27$, $p < .05$), and sex was a significant predictor ($B = 6.86$, $\beta = .177$, $p < .01$), with females being more open to working with people with disability. However, these factors only accounted for less than 2% of the variance in openness to working with PWD ($R^2 = .014$).

The second step of the hierarchical multiple regression analysis added self-other overlap to the model, allowing for a test of the association between self-other overlap and openness to working with PWD controlling for the effects of sex and age. This step of analysis revealed self-other overlap is a significant predictor of openness to working with PWD ($B = 7.13$, $\beta = .401$, $p < .001$), with this overall model predicting 17% of the variance in openness to working with people with disability ($R^2 = .171$). Sex remained a significant predictor ($B = 6.86$, $\beta = .177$, $p < .01$) of openness to working with PWD.

Self-Other Overlap as a Predictor of Primarily Working with People with Disability

To further examine the association between self-other overlap and likelihood of working primarily with people with disability, a hierarchical multiple regression analysis was performed (see Table 4). For this analysis the individual trait factors of sex and age were entered into the first step of the model to evaluate their ability to predict likelihood of working primarily with PWD. The overall model was significant ($F(2, 618) = 3.72$, $p < .05$), and sex was a significant predictor ($B = 5.00$, $\beta = .084$, $p < .05$), with females rating themselves as being more likely to primarily work with PWD. However, these factors only account for less than 2% of the variance in likelihood of working primarily with PWD ($R^2 = .012$).

The second step of the hierarchical multiple regression analysis added self-other overlap to the model, allowing for a test of the association between self-other overlap and likelihood of working primarily with PWD controlling for the effects of sex and age. This step of analysis revealed self-other overlap is a significant predictor of likelihood of working primarily with PWD ($B = 6.75$, $\beta = .375$, $p < .001$), with this overall model predicting 15% of the variance in likelihood of primarily working with people with disability ($R^2 = .152$). Sex remained a significant predictor ($B = 5.27$, $\beta = .089$, $p < .05$) of likelihood of working primarily with PWD.

Additionally, age was a significant predictor ($B = 1.69$, $\beta = .076$, $p < .05$) of likelihood of working primarily with PWD, with each increasing year of age being associated with an increase in the likelihood of working primarily with PWD.

Study 1 Discussion

Study 1 was an initial test of the association between self-other overlap and willingness to work with people with disability. As predicted, self-other overlap was significantly, and uniquely, associated with both openness to working with PWD, and likelihood of working primarily with PWD, as part of one's future career. The findings of this study provided support for the first hypothesis (H1) by demonstrating an association between self-other overlap and willingness to work with people with disability in a sample of college undergraduates. In both hierarchical regression models, being female was association with higher levels of willingness to work with people with disability. As a result, gender was included as a covariate in Study 2 and Study 3.

Study 2

Study 2 was designed to replicate Study 1 and provide a further test of the first hypothesis (H1) by evaluating whether self-other overlap is a unique predictor of willingness to work with people with disability, above and beyond the effect of trait empathy and attitudes toward people with disability. Empathy and attitudes were selected as targets of this evaluation because they are both key factors that have commonly been the focus of previous work investigating helping behaviors and actions towards PWD (Fredheim et al., 2013; Sahin & Akyol, 2010; Satchidanand et al., 2012; Shakespeare et al., 2009; Sturmer et al., 2006). In this study, attitudes were operationalized as explicit thoughts about nature of people with disability, while empathy was operationalized as individuals' emotional response to others. These components (i.e., explicit

evaluative thoughts, and emotional responsiveness to others) were predicted to capture psychological aspects associated with willingness to work with people with disability that are separate from the sense of closeness and inclusion of the other in the self that was assessed through ratings of self-other overlap. Thus, based on work by Cialdini et al. (1997) and Crisp and Turner (2009), it was hypothesized that self-other overlap would be a significant unique predictor of willingness to work with PWD in models including self-other overlap, empathy, and attitudes.

Methods

Procedure

Participants signed-up for and completed an online survey through an undergraduate research pool portal. After agreeing to an electronic informed consent, they completed a battery of questions (105 total items) capturing their: level of self-other overlap with people with disability, state of empathy towards PWD, willingness to work with PWD, career interest, extent and diversity of previous experiences with PWD, feelings of similarity to PWD, trait empathy, attitudes toward PWD, and demographic information. At the conclusion of the survey, participants were thanked for their participation, awarded credit, and dismissed from the study.

Participants

Participants were 177 undergraduates[3] recruited from the Psychology Department participant pool.[4] The overall sample was 81.4% freshman (n = 144; 11.9% sophomore, 4.5%

[3]A priori power analyses were conducted using G*Power 3.1. The *F* tests were specified as the test family, and the statistical test was specified as *linear multiple regression (fixed model, R^2 deviation from zero)*. Based on the results of Study 1 and the assumption that adding more variables to the model will not decrease the amount of variance explained by the overall model, the input parameters were: $R^2 = .15$ (effect size $f^2 = .17647$), α-error probability = .05, Power (1 – β-error probability) = .80, and total number of predictors = 12. This analysis determined 110 participants would provide sufficient power (power = 0.80) to detect the effects of a model with an overall R^2 of .15. Based on the obtained sample size and the a priori power calculations, this study was deemed to be sufficiently powered to test for the hypothesized associations.

[4] One-hundred and eighty participants initiated the study, but 2 were excluded from analyses for completing the study in less than 4 minutes (240 seconds) and 1 was eliminated for taking longer than 115 (6900 seconds) minutes to complete the study.

junior, and 2.3% senior) and 68.9% identified as women (n = 122),[5] with ages ranging from 18-33 (*M* = 18.95, *SD* = 1.45).

Measures

Self-Other Overlap with People with Disability. Self-other overlap with people with disability was measured using the same modified Inclusion of Other in the Self Scale (Aron et al., 1992) used in Study 1(see Appendix A), with circles representing higher levels of overlap being associated with higher scale values (1 = two non-overlapping circles, 7 = two almost completely overlapping circles).

We-ness Evaluation. Participants were asked to indicate the extent to which they would use the term *we* to describe their relationship with people with disability (i.e., *Please indicate to what extent you would use the term "we" to characterize you and people with disability.*). Participants responded to this item using a 7-point scale (0 = *Not at All*; 6 = *Extremely*). This item was based on one used by Cialdini et al. (1997; Manner et al., 2002).

State Empathy Towards People with Disability. To measure state empathy, participants were asked to rate the extent to which they experienced 6 emotions when they think about people with disability (i.e., *Please indicate the extent to which you experience each of the following emotions when thinking about people with disability: sympathetic*, *soft-hearted*, *warm*, *compassionate*, *tender*, *moved*.). Participants responded to this item using a 7-point scale (0 = *Not at All*; 6 = *Extremely*). A mean state empathy score was created for each participant based on their responses to the 6 items. This state empathy measure was based on one used by both Batson et al. (1997a; 1997b; 2007) and Cialdini et al. (1997; Manner et al. 2002).

[5] Studies 2-5 captured self-identified gender as a demographic variable instead of biological sex.

Openness to Working with People with Disability. Participants were asked to indicate the extent to which they are open to working with people with disability as part of their future career (i.e., *Please use the slider to indicate the extent to which you are open to working with people with disability as part of your future career.*). They responded to this question by moving a slider from *Not at All Open* (0) to *Very Open* (100) on a 101-point scale. See Appendix D.

Likelihood of Working Primarily with People with Disability. Participants were asked to indicate the extent to which they are likely to primarily work with people with disability as part of their future career (i.e., *Please use the slider to indicate the extent to which you are likely to work primarily with people with disability as part of your future career.*). They responded to this question by moving a slider from *Not at All Likely* (0) to *Very Likely* (100) on a 101-point scale. See Appendix E.

Anticipated Percentage of Time Spent Working with People with Disability. Participants were asked to report the percentage of their time they anticipate spending working with people with disability as part of their future career (i.e., *When you are working in your future career, what percentage of your time will be spent working with people with disability?[Please enter a number from 0-100%.]*). They responded to this question by entering a value from 0-100%.

Previous Close Personal Exposure to People with Disability. Previous close personal exposure to people with disability was assessed using a single item based on one that has been utilized previously in work with medical students (i.e., *Do you have a friend or relative with a disability?*; (Symons, Fish, McGuigan, Fox, & Akl, 2012; Symons et al., 2014). Participants will respond to this question by either selecting *Yes* (1) or *No* (0).

Previous Experiences Working with People with Disability in School or as Part of Paid Employment. Previous experiences working with people with disability in school or as part of paid employment was assessed using a single item based on previous work with medical students (i.e., *Have you had any experiences working with people with disability as part of paid employment or school?;* Symons et al., 2012, 2014). Participants responded to this question by either selecting *Yes* (1) or *No* (0).

Previous Experiences Working with People with Disability Outside of School or as Part of Paid Employment. Previous experiences working with people with disability outside of school or paid employment was assessed us using a single item as based on previous work with medical students (i.e., *Have you had any experiences working with people with disability (i.e., volunteering, teaching) outside of paid employment or school?*; Symons et al., 2012, 2014). Participants responded to this question by either selecting *Yes* (1) or *No* (0).

Diversity and Frequency of Contact with People with Disability. Diversity and frequency of contact with people with disability was assessed using a version of the Contact with Disabled Persons Scale (Yuker & Hurley, 1987) that was modified to focus on PWD in general (see Appendix F). This scale includes 20 items (e.g., *How often have you had a long talk with a person who is disabled?*, *How often have you been annoyed or disturbed by the behavior of a person with a disability?*). Participants responded to these items by selecting one of 5 response options (0 = *Never*, 1 = *Once or twice*, 2 = *A few times*, 3 = *Often,* 4 = *Very often*). Even though some of these items refer to negative contact with people with disability, they are not revers-coded. The goal of the measure is simply to obtain an overall assessment of extent and diversity of contact (Yuker & Hurley, 1987). A frequency of contact with people with disability score was calculated for each participant by taking an average of participants' ratings across all 20 items. A

diversity of contact with people with disability score was created by first recoding the responses to the 20 items such that 0 was still 0, but all other values above were coded as a 1. This allowed for a score to be created indicating the total number of experiences participants indicated having at least once or twice.

Similarity. Participants were asked to respond to a single item to rate the extent to which they are similar to people with disability (i.e., *How similar are you to people with disability?*). Participants responded to this item using a 7-point scale (0 = *Not Similar at All*; 6 = *Very Similar*). This item was based on previous work evaluating the association between self-other overlap and prosocial behavior for both individuals (Batson, Sager, Garst, Kang, & Al, 1997; Myers et al., 2014) and groups (Oveis, Horberg, & Keltner, 2010).

Trait Empathy. Trait empathy was assessed using the Toronto Empathy Questionnaire (Spreng, McKinnon, Mar, & Levine, 2009). The questionnaire consists of 16 items (e.g., *when someone else is feeling excited*, *I tend to get excited too; It upsets me to see someone being treated disrespectfully*; *I get a strong urge to help when I see someone who is upset*), with half of the items reverse scored (e.g., *I do not feel sympathy for people who cause their own serious illnesses*; *I am not really interested in how other people feel*; *I find it silly for people to cry out of happiness*). Participants responded to these questions by selecting one of 5 response options (0 = *Never*, 1 = *Rarely*, 2 = *Sometimes*, 3 = *Often,* 4 = *Always*). See Appendix G.[6]

Attitudes Toward People with Disability. Attitudes toward people with disability was assessed using the Scale of Attitudes Towards Disabled Persons (Antonak, 1981; Antonak & Livneh, 1988, 2000). This instrument includes 24 items (e.g., *most disabled people are willing to*

[6] A short version of Interpersonal Reactivity Index was also included as another measure of trait empathy, but the items for this measure were not properly programed for the online survey for Study 2 and Study 3. Thus, the data from these items were not considered in the analyses for these two studies.

work, *disabled people show a deviant personality profile*, *disabled individuals can be expected to fit into competitive society*; see Appendix H). Participants responded to these items using a 6-point scale (0 = *I disagree very much*, 1 = *I disagree pretty much*, 2 = *I disagree a little*, 3 = *I agree a little*, 4 = *I agree pretty much*, 5 = *I agree very much*). Half of the items were reverse coded.

Warmth. Warmth was assessed utilizing a single, face valid item (Fiske, Cuddy, & Glick, 2007; Fiske, Cuddy, Glick, & Xu, 2002) modified to capture participants' evaluations of PWD (i.e., *People with disability are warm*.). Participants responded using a 7-point scale (0 = *strongly disagree*; 6 = *strongly agree*).

Competence. Competence was assessed utilizing a single, face valid item (Fiske et al., 2007, 2002) modified to capture participants' evaluations of people with disability (i.e., *People with disability are competent.*). Participants responded using a 7-point scale (0 = *strongly disagree*; 6 = *strongly agree*).

Disability Attitude Object Definition. Participants were asked to describe who they were thinking about when responding to questions about people with disability (i.e., *Describe the people you have been thinking about when you have been responding to the last several questions about people with disability.*). They provided their response to this open-ended question using a blank text box (see Appendix I for a selection of responses).

Social Desirability Check. The Marlowe-Crown Social Desirability Scale was administered to participants at the end of the survey to provide a check for social desirability. The version used (Short Version – Form C; Reynolds, 1982) contained 13 items (e.g., *It is sometimes hard for me to go on with my work if I am not encouraged*; *No matter who I'm talking to, I'm always a good listener*; see Appendix J), and participants responded to these items by

indicating whether the statement was true (1) or false (0) with respect to themselves. Social desirability scores were created by calculating the sum of all 13 items for each participant (eight items were reverse coded). Higher scores indicated higher levels of social desirability.

Age. Age was assessed by allowing participants to type a number into a textbox.

Level in College. Level in college was assessed by allowing participants to select one of 4 options (0 = *Freshman*, 1 = *Sophomore*, 2 = *Junior*, 3 = *Senior*).

Gender. Gender was assessed by allowing participants to select either man (0) or woman (1).

Results

Descriptive Statistics

Table 5 provides the means, standard deviations, and median values for the study variables. Both the mean (M = 3.32, SD = 1.69) and median (3) values for self-other overlap fell below the mid-point of the 7-point scale (1 = two non-overlapping circles, 7 = two almost completely overlapping circles). The mean ratings for primarily working with PWD (M = 40.82, SD = 28.71) and percentage of time anticipated working with PWD (M = 28.49, SD = 25.43) fell below the mid-point of the scale. The mean rating of openness to working with PWD (M = 67.44, SD = 27.40) fell above the mid-point of the scale. The mean ratings for trait empathy (M = 2.97, SD = .53) and attitudes (M = 3.39, SD = .63) were both also above the mid-point of the scale.

Bivariate Correlations

Table 6 provides the bivariate correlations for the study variables. As predicted, there was a positive association between self-other overlap and openness to working with people with disability (r = .156, p = <.05), primarily working with PWD (r = .220, p = <.01), and percentage

of anticipated time working with PWD (r = .245, p = <.01). Additionally, self-other overlap was positively associated with diversity of contact (r = .253, p = <.01), frequency of contact (r = .345, p = <.01), we-ness (r = .393, p = <.01), similarity (r = .254, p = <.01), and, to a lesser extent, trait empathy (r = .173, p = <.05), and attitudes toward people with disability (r = .161, p = <.05). Trait empathy and attitudes toward PWD are both significantly positively associated with openness to working with PWD (Trait Empathy: r = .251, p = <.01; Attitudes r = .364, p = <.01), and percent of time anticipated working with PWD (Trait Empathy: r = .270, p = <.01; Attitudes r = .282, p = <.01), but not primarily working with PWD (Trait Empathy: r = .131, p = *ns*; Attitudes r = .130, p = *ns*). State empathy was significantly positively associated with openness to working with PWD (r = .183, p = <.05), but not primarily working with PWD (r = .138, p = *ns*) or anticipated percent time working with PWD (r = .109, p = *ns*). Given the strong correlation between state empathy and trait empathy (r = .429, p = <.01), and that trait empathy is both associated with a higher number of willingness variables and more strongly associated with those variables, only trait empathy was included in further analyses. Age, college level, and social desirability were all not significantly associated with the willingness variables, so they were also excluded from the further analyses.

Self-Other Overlap as a Unique Predictor of Willingness to Work with PWD

To assess whether self-other overlap is a unique predictor of the willingness variables above and beyond attitudes toward people with disability trait empathy, hierarchical multiple regression analyses were performed. For these analyses, self-other overlap was entered in the first step of the model. In the second, third, and fourth steps, attitudes toward people with disability, trait empathy, and gender, respectively, were added to the analysis. In the model predicting openness to working with PWD (see Table 7), only attitudes was a significant

predictor, with the overall model accounting for 15% of the variance in openness when attitudes was added in step 2 (R^2 = .151). In the model predicting primarily working with PWD (see Table 8), only self-other overlap was a significant predictor, with the overall model accounting for 5% of the variance in primarily working with PWD when it was added in step 1 (R^2 = .051), and the total variance explained not substantially changing by the end of step 4 (R^2 = .065). Finally, in the model predicting anticipated percent of time working with PWD (see Table 9), self-other overlap was the only significant predictor throughout all the steps it was included in the model. As with the model predicting primarily working with PWD, self-other overlap accounted for 5% of the variance in anticipated percent of time working with PWD when it was added in step 1 (R^2 = .052). The final overall model including attitudes, trait empathy, and gender accounted for 15% of the variance in anticipated percent of time working with PWD (R^2 = .150).

Study 2 Discussion

Study 1 demonstrated that self-other overlap does predict a significant amount of variance in variables related to willingness to work with people with disability. Study 2 built off this work by replicating those findings and providing evidence to support self-other overlap as a unique predictor of willingness to work with people with disability in models including self-other overlap, trait empathy, and attitudes. Thus, the findings of this study provide further support for the first hypothesis (H1).

Study 3

Study 3 was developed to provide a further test of the first hypothesis (H1) and replicate the findings of Studies 1 & 2 by examining self-other overlap as a predictor of the groups of people participants would choose to help with their work. Operationalizing willingness to work

with people with disability in this way, provided an opportunity to evaluate whether self-other overlap is associated with the expression of a behavior directed toward people with disability.

Specifically, for this study, participants were told that they would be participating in study helping local non-profit organizations understand the psychological profiles of the people who support their causes so that these organizations can more effectively recruit people to work for them. After completing a skill inventory, participants were told they have skills that would be of value to these organizations and asked to honestly complete a series of questions about themselves and how they feel towards other groups of people. It was predicted that self-other overlap would be a significantly associated with both the groups of people they selected as being most interested in working to help, and the groups they selected as being least interested in working to help. It was also predicted that self-other overlap would be a significant unique predictor of the groups selected by the participants in a models including trait empathy and attitudes.

Methods

Procedure Overview

Participants completed this study online after signing-up through the undergraduate research pool portal. During the initiation of this study, participants were told they would be helping local non-profit organizations understand the psychological profiles of the people who support their causes so that these organizations can more effectively recruit people to work for them. After completing a skill inventory, participants were told they have skills that would be of value to these organizations and asked to honestly complete a series of questions about themselves and how they feel towards other groups of people. Participants were then asked to select the three groups of people they would most be interested in working with if they were

recruited to work at a non-profit organization serving one of those groups of people, and the three groups of people they would least interested in working with under the same conditions. After they made their selections, participants were asked to complete a battery of measures that included a series of self-other overlap items with different groups as the evaluation target, in addition to measures of trait empathy and attitudes towards each of these groups. The order of selecting the groups they are most and least interested in working with and target groups of the measures were randomized to counteract any order effects. At the conclusion of the study, participants were thanked for their participation, awarded credit, and dismissed from the study.

Cover Story. Before completing the initial skill inventory, participants read the following prompt:

> Our lab is working with local non-profit organizations to develop general trait profiles of people who may be interested in working with the populations that they serve. This information will be used to help them better target their marketing and talent recruitment efforts.
>
> To start-off, we are going to have you complete an initial skill inventory to see if you have a skill set that might be of interest to our partners.

After the participants completed the initial skill inventory, they were then told they have a skill set that would be valued by the non-profit organizations, reminded that their responses are anonymous, and asked to complete a series of questions about themselves and their feelings towards other groups of people:

> Thank you! You have skills that our non-profit partners would value.
>
> We are now going to ask you a series of questions about yourself and your feelings towards other groups of people. We know that sometimes people respond to these questions in ways that do not reflect how they truly feel because they are concerned about what other people might think of their responses. However, for us to best help these organizations, we need you to answer these questions as honestly as possible.
>
> The survey you are completing is completely anonymous. This means that nobody will be able to connect you to any of the responses you provide.

Participants were then asked to select the three groups they would most be interested in working with, and the three groups they would least be interested in working with at a non-profit.

Initial Skill Inventory. Participants were provided a list of 25 skills (see Appendix K) and asked to indicate whether they possess each of the skills by selecting on of two options (1 = *Yes*, 0 = *No*). Selections made on this list had no bearing on the rest of the components of the survey, it was only used to help give legitimacy to the cover story and to make the participants feel they might be uniquely qualified to help the target groups.

Participants

Participants were 218 undergraduates[7] recruited from the Psychology Department participant pool.[8] The overall sample was 74.3% freshman (n = 162; 17.9% sophomore, 3.2% junior, and 3.7% senior) and 66.1% identified as women (n = 144), with ages ranging from 18-33 (M = 18.81, SD = 1.36).

Measures

Groups Selected to Work With. Participants were asked to select three groups from a list that they would most be interested in working with if they were to work for a non-profit specializing in serving that group (i.e., *If a non-profit organization serving one of groups of people below needed someone with your skillset, which groups of people would you be most interested in working to help? [Please select the 3 groups of people.]*). Participants were able to

[7] 15 participants were excluded from analyses because of the duration quality check. 1 participant completed the study in less than 4 minutes (240 seconds), and 14 participants took longer than 115 minutes (6900 seconds) to complete the study.

[8] A priori power analyses were conducted using G*Power 3.1. The *z* tests were specified as the test family, and the statistical test was specified as *Logistic Regression*. The input parameters were: Odds ratio = 1.5 (representing a small effect size of approximate .2 Cohen's *d*; Chen, Cohen, & Chen, 2010), Pr(Y=1|X=1) H0 = .3 (representing the probably of selecting the group based on chance), α-error probability = .05, Power (1 – β-error probability) = .80, R^2 other X = 0, X distribution = Normal, X parm μ = 0, and X parm σ = 1. This analysis determined 190 participants would provide enough power (power = 0.80) to detect the effects, suggesting this study was sufficiently powered.

select from 10 different groups (i.e., *people with disability, people who are homeless, people who live in low-income housing, people living with HIV, people who are military veterans, refugees, women who have been sexually assaulted, people who are gay or lesbian, people who want to start a business, and older adults*.)

Groups Selected Not to Work With. Participants were asked to select three groups from a list that they would be least interested in working with if they were to work for a non-profit specializing in serving that group (i.e., *If a non-profit organization serving one of groups of people below needed someone with your skillset, which groups of people would you be least interested in working to help? [Please select the 3 groups of people.]*). Participants were then able to select from the same 10 groups (e.g., *people with disability, people who are homeless*)

Self-Other Overlap. Self-other overlap with the target group was measured using the same type of modified Inclusion of Other in the Self Scale (Aron et al., 1992) used in Study 1 & 2. Participants were asked to select the pair of circles that best represents their relationship with each target group. Each of the 7 pairs of circles represented different levels of overlap between the self and the target group (see Appendix L), with circles representing higher levels of overlap being associated with higher scale values (1 = two non-overlapping circles, 7 = two almost completely overlapping circles). There were 10 self-other overlap items, one for each group (i.e., *people with disability,, people who are homeless, people who live in low-income housing, people living with HIV, people who are military veterans, refugees, women who have been sexually assaulted, people who are gay or lesbian, people who want to start a business, and older adults*.)

In-Group/We-ness Evaluation. Participants were asked to indicate the extent to which they would use the term *we* to describe their relationship with each target group (i.e., *Please*

indicate to what extent you would use the term "we" to characterize you and [target group].). Participants responded each item using a 7-point scale (0 = *Not at All*; 6 = *Extremely*).

State Empathy. To measure state empathy, participants were asked to rate the extent to which they experienced 6 emotions when thinking about each target group (i.e., *Please indicate the extent to which you experience each of the following emotions when thinking about [target group]: sympathetic*, *soft-hearted*, *warm*, *compassionate*, *tender*, *moved*.). Participants responded using a 7-point scale (0 = *Not at All*; 6 = *Extremely*).

Similarity. Participants were asked to respond to a single item to rate the extent to which they are similar to each of the target groups (i.e., *How similar are you to [target group]?*). Participants responded to this item using a 7-point scale (0 = *Not Similar at All*; 6 = *Very Similar*).

Warmth. Warmth was assessed utilizing a single, face valid item (Fiske et al., 2002; 2007) modified to capture participants' evaluations of each target group (i.e., *[target group]are warm*.). Participants will respond using a 7-point scale (0 = *strongly disagree*; 6 = *strongly agree*).

Competence. Competence was assessed utilizing a single, face valid item (Fiske et al., 2002; 2007) modified to capture participants' evaluations of each target group (i.e., *[target group] are competent.*). Participants will respond using a 7-point scale (0 = *strongly disagree*; 6 = *strongly agree*).

Trait Empathy. Trait empathy was assessed using the Toronto Empathy Questionnaire (Spreng et al., 2009). The questionnaire consists of 16 items (see Appendix G). Participants will respond to these questions by selecting one of 5 response options (0 = *Never*, 1 = *Rarely*, 2 = *Sometimes*, 3 = *Often,* 4 = *Always*).

Attitudes Towards People with Disability. Attitudes towards people with disability were assessed using the Scale of Attitudes Towards Disabled Persons (Antonak, 1981; Antonak & Livneh, 1988, 2000). This instrument includes 24 items (see Appendix H). Participants will respond to these items using a 6-point scale (0 = *I disagree very much*, 1 = *I disagree pretty much*, 2 = *I disagree a little*, 3 = *I agree a little*, 4 = *I agree pretty much*, 5 = *I agree very much*).

Feeling Thermometer. Attitudes toward each target group were assessed using a feeling thermometer (Haddock, Zanna, & Esses, 1993; Herek, 2002; Herek & Capitanio, 1999). For this item, participants were asked to use a slider on a scale from 0 (cold) to 100 (warm) to indicate the extent to which they feel favorably/warm or unfavorably/cold toward each of the target groups (see Appendix M).

Demographics. Age, level in college, and gender were all assessed in the same manner as in Study 2.

Results

Table 10 provides the means, standard deviations, and median values for the study variables. People with disability (M = 3.30, SD = 1.73), gay/lesbian people (M = 3.57, SD = 1.82), business people (M = 3.86, SD = 1.99), and older adults (M = 4.44, SD = 1.64) were the four groups for which participants provided the highest mean ratings of self-other overlap. People who are homeless (M = 2.18, SD = 1.47), veterans (M = 2.04, SD = 1.81), refugees (M = 2.04, SD = 1.49), and people living with HIV (M = 1.59, SD = 1.28) were the four groups for which participants provided the lowest mean ratings of self-other overlap.

Bivariate Correlations

Table 11 provides the bivariate correlations for the association between the study variables for each group and the selection outcomes (i.e., selecting a group as one most

interesting in working to help, or selecting a group as least interested in working to help). Self-other overlap was positively associated with selecting PWD as a group they were most interested in working to help (MWH; r = .220, p = <.05), and it was negatively associated with selecting PWD as a group they were least interested in working to help (LWH; r = -.136, p = <.05). This means that people who have high levels of self-other overlap with PWD were more likely to select PWD as a group they are most interested in working to help, and less likely to select PWD as a group they are least interested in working to help. This same pattern of association (i.e., self-other overlap positively associated with MWH, and negatively associated with LWH) was also observed when the target group was: homeless people (MWH: r = .179, p = <.05; LWH: r = -.138, p = <.05), veterans (MWH: r = .305, p = <.05; LWH: r = -.152, p = <.05), gay/lesbian people (MWH: r = .188, p = <.05; LWH: r = -.264, p = <.05), and business people (MWH: r = .433, p = <.05; LWH: r = -.401, p = <.05). For 4 of the other 5 groups (i.e., low-income, refugees, women who have experienced sexual assault, and older adults), self-other overlap was only associated with one of the selection variables. People with HIV was the only group for which self-other overlap was not associated with one of the selection variables.

For people with disability, this same pattern of association (i.e., positive for MWH, negative for LWH) was observed for state feelings of empathy (MWH: r = .183, p = <.05; LWH: r = -.295, p = <.05) and the feeling thermometer (MWH: r = .189, p = <.05; LWH: r = -.216, p = <.05). Competence (r = -.198, p = <.05), trait empathy (r = -.284, p = <.05), and attitudes toward people with disability (r = -.177, p = <.05) were only associated with selecting PWD as a group participants were least interested in working to help. See Table 12 for bivariate correlations among all of the study variables related to people with disability.

Self-Other Overlap as a Unique Predictor of Selecting People with Disability

Multiple logistic regression analyses were conducted to test whether self-other overlap is a unique predictor of selecting PWD as either the group they would most be interested, or least interested, in working to help when accounting for attitudes toward people with disability and trait empathy. In the hierarchical multiple logistic regression model predicting selecting PWD as a group participants were most interested in working to help (see Table 13), only self-other overlap was a significant predictor. The overall model accounted for 7.5% of the variance in selecting PWD ($R^2 = .075$), with self-other overlap (OR = 1.32, $p = .002$) accounting for 5.3% of the variance when it was added in the first step ($R^2 = .075$). In the hierarchical multiple logistic regression model predicting selecting PWD as a group participants are least interested in working to help (see Table 14), self-other overlap was not a significant predictor at any step in the model. The final overall model included self-other overlap, attitudes toward PWD, trait empathy, and gender, and accounted for 7.2% of the variance in selecting PWD ($R^2 = .072$). Trait empathy was the only significant predictor of selecting PWD in the final step of the model (OR = 0.36, $p = .028$).

Study 3 Discussion

Study 1 and Study 2 provided evidence to suggest that self-other overlap is a unique predictor of willingness to work with people with disability. Study 3 furthered the understanding of this association in three ways. First, this study demonstrated that self-other overlap was associated with choices people make when selecting groups they would be interested in working to help. This is significant because it suggests that self-other overlap is not associated solely with items focusing on people with disability. Rather, it is associated also with selecting people with disability as a group to work to help in a context where disability is not the focus and a variety of other options are available. Second, this study suggests that self-other overlap is associated with

willingness to work with groups of people in addition to people with disability. The findings indicate that self-other overlap may not predict willingness in the same way for all groups of people, but for almost every group in this study (people living with HIV was the only exception), self-other overlap was associated with participants' choices related to using their work to help the group. Finally, this study suggests, that factors associated with selecting a group as one participants are most interested in working to help, and the factors associated with selecting a group as one participants are least interested in working to help may be different. For people with disability, this is demonstrated by self-other overlap being a unique predictor of selecting this group as one they are most interested in helping with their work, but it was not a unique predictor of choosing not to work with people with disability in models including trait empathy and attitudes toward people with disability. Overall, these findings provide additional support the first study hypothesis (H1).

Study 4

Study 4 provided an initial test of the malleability of self-other overlap in the context of a brief intervention. Given the effectiveness of reading interventions in altering ratings of self-other overlap in previous studies (Cameron et al., 2006; Vezzali et al., 2012), and the potential benefits associated with employing this kind of low-cost intervention, self-paced online modules were used for brief intervention in this study. Based on the strong association between both we-ness and similarity and self-other overlap in Studies 2 and 3, this study manipulated the framing of the intervention content with respect to similarity and in-group status. In the standard control condition, participants were exposed to a standard training intervention focusing on interacting people with disability. In the other two conditions, the participants were exposed to the same overall content, the wording was just altered to frame the information either in terms of

interacting with PWD who are friends, family members, and classmates (i.e., in-group members with high levels of similarity), or PWD who are clients (i.e., out-group members with lower level of similarity). In line with the second study hypothesis (H2, it was predicted that the intervention that framed people with disability as being similar to the participants and as part of the participants' in-group (i.e., the friends, family members, and classmates-framed condition) would result in participants' providing higher ratings of self-other overlap, compared to the other two conditions (i.e., the standard control and client-framed conditions).

Methods

Procedure Overview

Participants signing-up for this study through the undergraduate research pool portal. The study consisted of both an initial in-lab session and on online follow-up survey 7 days later. During the in-lab session participants completed an electronic informed consent and a randomly assigned computer-based training module that was immediately followed with a battery of questions via a digital survey. Upon completing survey participants were dismissed from the in-lab portion of the study and reminded that they would receive an email with the follow-up survey in 7 days.

Cover Story. Participants were told they are helping to pilot test a brief training module focused on communicating with people with disability. Before completing the training module, participants read the following prompt:

> Today you will be helping us to pilot test a brief training module focused on communicating with people with disability. After completing the module, we are going to ask you to complete a series of questions.

After completing the training module, participants read the following prompt to reinforce the cover story and to try to reduce social desirability bias:

> Thank you for completing the training module! We are now going to have you complete a series of questions.
>
> We know that sometimes people respond to these questions in ways that do not reflect how they truly feel because they are concerned about what other people might think of their responses. However, for us to get a realistic sense of the usefulness of this training module, we need you to answer these questions as honestly as possible. We do not want to waste people's time by having them complete a module that has no real benefit.
>
> The survey you will complete is confidential. This means that your name or other personally identifying information will not be matched-up with any of the responses you provide.

Brief Intervention Manipulation. The content of the modules was based on two WikiHows that provide information on interacting and communicating with people with disability ("How to interact with people who have disabilities," 2017). The information in the module included a definition of disability, and recommendations on things to do and not do when interacting with people with disability. Questions were included throughout the module to help reinforce the condition manipulation and provide the participants with opportunities to think though the module content. The language for the standard control condition was kept the same as it was presented in the original WikiHow modules (see Appendix N). The friends, family members, and classmates-framed condition and client-framed condition were both altered from the standard control condition by changing the language to frame some of the question and content so that the focus was on the respective condition's target (see Appendix O & P).

Participants

Participants were 241 undergraduates[9] recruited from the Psychology Department participant pool.[10] The overall sample was 75.9% freshman (n = 184; 16.6% sophomore, 3.3%

[9] 11 participants were excluded from analyses because of the duration quality check. 4 participants completed the study in less than 10 minutes (600 seconds), and 7 participants had data records suggesting they took longer than 90 minutes (6900 seconds) to complete the study.

[10] A priori power analyses were conducted using G*Power 3.1. The *t* tests were specified as the test family, and the statistical test was specified as Means: Difference between two dependent means. The input parameters were: Effect size dz = .408 (representing a .5 point increase, assuming a standard deviation of 1 at both time points, and a correlation between the pre- and

junior, and 3.7% senior) and 58.9% identified as women (n = 142), with ages ranging from 18-32 (*M* = 18.60, *SD* = 1.30). An additional 7 participants did not complete the Time 2 follow-up survey and were not included in the analyses.

Time 1 Measures

All of the measures used in Study 2 were also administered to participants in this study. This included measures of self-other overlap, we-ness, similarity, warmth, competence, state and trait empathy, experiences with people with disability, attitudes toward people with disability, and a description of the disability target participants have been considering (see Appendix C, D, E, F, G, H, J, & M). All measures were related to people with disability. Participants were also asked to complete 9 items evaluating the training module (see Appendix Q). Age, gender, and level in college were also captured.

Time 2 Measures

All of the measures administered at Time 1 were also administered to participants at Time 2.

Results

Descriptive Statistics & Comparisons Between Conditions

Table 15 provides the means, standard deviations, and the outcomes of comparisons between and within conditions. Comparisons between conditions using ANOVA and Tukey's HSD post hoc tests suggest ratings of self-other overlap were not significantly different (Time 1: $F(2, 240) = .749$, $p = .47$; Time 2: $F(2, 232) = 1.68$, $p = .19$) for the friends, family, and classmates-framed condition (Time 1: $M = 3.93$, $SD = 1.74$; Time 2: $M = 4.11$, $SD = 1.81$)

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post-test results of .25), α-error probability = .05, Power (1 – β-error probability) = .80. This analysis determined 50 participants per condition would provide sufficient power (power = 0.80) to detect the effects.

compared to either the standard condition (Time 1: $M = 3.61$, $SD = 1.73$; Time 2: $M = 3.57$, $SD = 1.80$) or the client condition (Time 1: $M = 3.90$, $SD = 1.58$; Time 2: $M = 3.80$, $SD = 1.51$). This was true both immediately after the intervention (i.e., Time 1) and at follow-up 7 or more days later (i.e., Time 2). Comparisons within each condition using paired-samples t-tests suggest there were no significant differences between ratings of self-other overlap at Time 1 or Time 2 for any of the conditions.

Study 4 Discussion

Overall, the hypothesis (H2) that framing the intervention content messages to focus explicitly on drawing connections to friends, family members, and classmates, would results in a significantly higher ratings of self-other overlap, compared to the other two conditions (i.e., standard control and client-focused) was not supported by this study. However, qualitatively the mean ratings of self-other overlap was higher for the participants who completed the two modified conditions (i.e., friend, family, classmates-framed, clients-framed) compared to the standard condition. This suggests there may have been a small benefit associated with modifying the educational modules to frame the content in terms of people participants will interact with in their everyday lives. It was not anticipated that the clients-framed condition would potentially increase rating of self-other overlap because it was predicted to increase perceptions of people with disability as out-group members. However, it is possible that this particular intervention, because it focused on clients with disability as people, instead of as clients who are more challenging or time consuming to work with, was effective in having an effect that was similar to that of the friends, family, and classmates-framed condition. However, additional studies will be needed to empirically test this explanation and provide a more definitive test of whether self-other overlap is malleable in this context.

Overall Discussion

The goal of this set of studies was to answer the question: "Is self-other overlap a malleable predictor of willingness to work with people with disability?" The first three studies provided evidence indicating that self-other overlap is uniquely associated with both multiple measures of willingness to work with people with disability (Studies 1 & 2), and selecting PWD as a group to help with one's work (Study 3). Thus, these findings suggest that self-other overlap is a unique predictor of willingness to work with PWD, supporting the first hypothesis of the study (H1). The last study (Study 4) examined whether self-other overlap was malleable based on the framing of a brief intervention. No statistically significant differences were observed between the intervention conditions, therefore, there is no clear evidence that self-other overlap is malleable based on this particular study. However, the pattern of self-other overlap rating among the conditions suggest more work may be warranted to further explore this component of the research question.

Placing the Findings in Context

Many interventions geared towards improving services provided to people with disability focus on: 1. identifying the issues faced by this group of people to increase awareness, 2. providing counter examples to common stereotypes to challenge attitudes and perceptions, 3. using personal accounts and stories of individuals experiencing mistreatment or discrimination to appeal to people's emotions, and 4. describing ways people can modify their service environment and behavior to better meet the needs of people with disability (Jones et al., 2015; Trollor et al., 2016). Some programs even offer brief experiences interacting with people with disability, have the training sessions taught by people with disability, or even simulate disabilities to facilitate perspective taking (Crotty et al., 2000; Kahtan et al., 1994; Symons et al.,

2009). Regardless of the mix of these specific components, the training or educational sessions often are disability-focused, with the content and activities highlighting the differences between the participants and people with disability. While appreciating differences, understanding how to accommodate them, and feeling emotionally compelled to act are all key parts of changing people's behavior in the moment, highlighting the differences between service providers and people with disability may have an impact on whether service providers put themselves in the position to act in the first place.

At its core, modifying one's own behavior to better meet the needs of another is an act of helping, especially when that modification is likely to come with cost in terms of time, energy, and potential profit (Dovidio, 1984), as is the case when it comes to supporting the needs of people with disability. At an organizational level, modifying the service environment's design and purchasing accessible equipment costs money, and spending the time necessary to accommodate the needs of people with disability can limit the potential for profit (Drum et al., 2009; Turk, Mudrick, & Albrecht, 2013). At the individual service provider level, working with clients with complex needs and accommodating their disability can make the provider's work more challenging and less financially rewarding, especially given the limited funding provided to programs supporting people with disability, and the high levels of poverty among this population (Mullner & Albrecht, 2011; Satchidanand et al., 2012; Turk et al., 2013; Wilkinson et al., 2012). Thus, being willing to work with people with disability, and especially being interested in working primarily with people with disability, reflects a willingness to make some personal sacrifices to help this group.

Helping others through one's work is different than other types of helping commonly examined in the psychology literature. Most experimental paradigms manipulate some piece of

information or way of viewing a situation, and then shortly after put research participants in a situation where they have an opportunity to express helping behavior (e.g., Batson, Polycarpou, et al., 1997; Batson, Eklund, Chermok, Hoyt, & Ortiz, 2007; Batson, Turk, Shaw, & Klein, 1995; Batson, Sager, et al., 1997; Cialdini et al., 1997; Maner et al., 2002; Sturmer et al., 2006); for counter example see Stürmer, Snyder, & Omoto, 2005; Wilson, 2000). This methodology provides insight into the psychological factors that contribute to expressing helping behavior rather immediately, highlighting the influence of situational attributions, emotion, and social pressure on helping behavior (Darley & Batson, 1973a; Dovidio, 1984; Oceja, Ambrona, López-Pérez, Salgado, & Villegas, 2010). However, choosing to accept the potential challenges of working with people with disability is not a decision that is simply made once or twice in the moment, but rather, it is a decision that requires a sustained commitment to help, despite a long-time scale and much higher level of investment. It also requires accepting working with a group of people, who by definition, are different from oneself, and who are often stigmatized and marginalized (Shakespeare et al., 2009). Thus, this type of helping is likely influenced more by pragmatic, egoistic forces such as the need for a paycheck, and the potential costs and benefits to one's self, family, and community (Burnstein et al., 1994; Cunningham, 1986; Hamilton, 1964; Krebs, 1991; Rushton, 1989).

The findings of this work make several key theoretical contributions. First, ratings of self-other overlap were shown, again, to be associated with choices related to long-term, high-investment helping behavior. Batson (Batson, 1997; Batson et al., 2007; Batson et al., 1997; Coke, Batson, & McDavis, 1978; Darley & Batson, 1973b) has long argued that prosocial behavior is driven by selfless, altruistic motives. While Cialdini (Cialdini et al., 1997; Neuberg et al., 1997) has provided evidence that prosocial behavior is driven by more self-focused motives

(i.e., helping the people with whom one has the highest level of self-other overlap). A key difference between the paradigms used to empirically test these assertions is that Batson typically uses helping situations that require immediate response, and can be resolved through a single, prosocial action (e.g., helping a victim in the street, volunteering to spend a few hours stuffing and addressing envelopes; Batson et al., 1997; Darley & Batson, 1973b), whereas Cialdini utilizes a paradigm where helping requires a large amount of cost and effort over an extended period of time (e.g., allowing a friend who was evicted to live in one's own home; Cialdini et al., 1997; Neuberg et al., 1997). The results of this work provide another instance where ratings of self-other overlap are associated with long-term, high investment helping behavior (e.g., choosing to primarily work with people with disability, choosing to spend a high percentage of time working with people with disability). However, it should be noted that both empathy and attitudes, at times, were also unique predictors of willingness to work with people with disability. This suggests that all three of these factors, inclusion of the other in the self, empathy, and attitudes may all contribute to these kind of prosocial career decisions.

Second, finding that ratings of self-other overlap are uniquely associated with the groups that individuals select to work with highlights the potential role prosocial motivations may play in people's career decisions, and provides a frame for understanding the factors that might influence these motivations. This is important for several key reasons. First, this work suggests that, if given the choice, people might use their work to help those who they feel closest to and see as being most like themselves. Recognizing this helps to identify a potential mechanism that could underlie the preferential treatment of one group of people over another in work-related contexts (i.e., maximizing benefits to clients, selecting mentees, allowing exceptions to company policies). Additionally, this work provides insight into a potential issue that can undermine the

efforts of professional recruitment pipelines that have been put in place to benefit underserved populations or high need areas. For example, initiatives have been implemented by some medical schools to recruit students from rural or inner-city areas, with the assumption that students who grew-up in these areas will return to them to serve their community. Implicit in this rationale is the assumption that the people who grew up in these areas feel connected to the people that live there and will make the prosocial choice to return to these challenging areas to work. However, given that these decisions are often based on demographic factors, little consideration is given to the fact that people feel varying levels of connection and integration to their hometowns, and the people in them. For example, for a number of people, working hard to go to medical school provides a way out of these areas. Thus, their efforts may not be motivated by feeling a strong connection to the community or seeing themselves as being a part of it in the future. Therefore, some people who grew-up in these areas may have no desire to return to them after medical school. This work may provide insight into at least one component that can help explain why these types of recruitment programs have not been as effective as anticipated.

Finally, many disability-focused interventions have implicitly acknowledged the importance of influencing ones' sense of self-other overlap to create long-term change, but it has not been explicitly identified as a unique target for intervention. This is reflected in the rationale laid out for the interventions that include components aimed at developing empathy or providing service providers with experiences interacting with people with disability (Ryan & Scior, 2014; Shakespeare et al., 2009). The authors of these interventions often discuss the importance of the service providers developing a sense of closeness with people with disability, but it is often mentioned in the context of altering attitudes or empathy (Karl et al., 2013; Shakespeare et al., 2009; Symons et al., 2009). People with disability themselves extol the importance of service

providers "seeing" beyond their disability and connecting with them as individuals (Morrison, George, & Mosqueda, 2008; Smith, 2009), but, again, the solutions proposed often focus on changing attitudes or increasing empathy (Byron & Dieppe, 2000; Iezzoni & Long-Bellil, 2012; Minihan et al., 2011; Shakespeare et al., 2009). This work suggests that the sense of closeness and integration associated with seeing members of a group as part of oneself is a factor that is quantitatively different from thinking positively about a group or feeling empathy for people.

When evaluated in terms of their potential to impact inclusion of the other in the self, effective intervention techniques often have elements that help people draw connections between themselves and the target group. For example, some of the most effective intergroup interventions incorporate activities that would enhance inclusion of the other in the self by promoting perspective taking, facilitating interpersonal interactions, and having multiple interactions in different contexts over time. Presented as empathy- or cultural competency-focused, these interventions are geared toward enhancing people's feeling of both being close and feeling close to one another. When executed in a way that does increase people's feelings in these domains (i.e., being close and feeling close) these interventions likely alter perceptions of self-other overlap. However, executing interventions with these kinds of components takes time and requires buy-in from the group of people involved. Therefore, the cost must be deemed to be worth it. While this work does not provide clear evidence to support the malleability of ratings of self-other overlap, changes in ratings of self-other overlap have been documented in other experimental studies (Aron, Melinat, Aron, Vallone, & Bator, 1997; Cameron et al., 2006; Fraley & Aron, 2004; Mallen, Day, & Green, 2003; Sprecher, Treger, Wondra, Hilaire, & Wallpe, 2013; Vezzali et al., 2012). Thus, given the challenges associated with creating long-term changes in attitudes and trait empathy (Fernndez-Olano, Montoya-Fernndez, & Salinas-Snchez,

2008; Kushner, Zeiss, Feinglass, & Yelen, 2014; Poole & Sanson-Fisher, 1980; Poustchi, Saks, Piasecki, Hahn, & Ferrante, 2013; Swift et al., 2013), this work suggests it may be worthwhile to further explore the benefits associated with developing interventions designed to create changes in perceptions of self-other overlap because of its unique association with willingness to work with people with disability.

Limitations and Future Directions

One of the primary limitations of this work is that that none of the studies have the dimension of temporal precedence necessary to test whether participants' sense of self-other overlap influences participants' willingness to work with people with disability. Study 1 and Study 2 asked participants to provide their ratings of self-other overlap before they were asked to answer items related to their willingness to work with people with disability, while Study 3 asked participants to make their selections before self-other overlap was measured, and the association between the variables remained consistent. Reversing the order in which participants completed this measure helps to address concerns about the timing of the self-other overlap item biasing the responses to the willingness items. However, these questions in all three of the studies were asked in the same moment in time. Given that the goal of this work was to take the initial steps to explore whether a relationship exists between self-other overlap and willingness to work with people with disability, the correlational nature of this work was appropriate, but it does mean that more work will be needed to understand the dynamics of any causal relationship that might exist.

Another key limitation to this work is that the willingness measures have not been validated. The novelty of the items and the associated lack of validation makes it hard to know whether these items capture a true measure of thoughts that would naturally occur as people are making career decisions. It is likely that most people will never explicitly ask themselves the

percent of their work time that they plan on spending serving a group of people. However, it may be possible that they will ask themselves whether they are open to working with a particular group of people, or if they are willing to commit to working primarily with a group of people (i.e., teachers choosing to work in an inner-city school district). Thus, there is a level of face-validity to these items and they are all strongly associated with one another, but the differences in means and level of investment and commitment between the individual items suggest more work is needed to further assess their validity.

In a related vein, even if the willingness measures are found to have high levels of construct validity, it is not known whether responses to these items are associated with the groups of people individuals ultimately work with as part of their career. There are many different factors that impact the work people ultimately do to make money and support themselves. In many cases, these decisions are driven by social, relational, fiscal, and other individual, interpersonal, and systems-level factors that have very little connection to the feelings individuals have towards the group of people they are serving through their work. Thus, it seems likely that self-other overlap and the responses participants provide on items capturing the groups they are willing to serve with their work will be most predictive in circumstances where individuals get to make choices about the work they do (i.e., medical students choosing a medical specialty, people selecting an organization at which to volunteer). Therefore, even though these studies create a context where all of the participants are able to indicate their willingness related to their future work, it is possible that the connection between their willingness and their actual work after they graduate, if one exists, may only be strong for a subset of participants. Again, more work is needed to better understand how thoughts related to work with particular groups of people translates into career decisions and work behavior.

With respect to the intervention study (Study 4), there are two key issues that limit the interpretation of its findings. First, the control condition may not have provided an appropriate comparison for assessing the impact of in-group- and similarity-framing on self-other overlap. To strengthen the external validity of this study, and to keep from artificially inflating the magnitude of the effects of self-other overlap-informed modifications, a standard of practice control condition was utilized. Thus, the control was representative of current educational interventions used to educate people about interacting with people with disability. The drawback of using this type of ecologically-valid control condition was that it contained elements that highlighted similarities and commonalities between the participants and people with disability. Therefore, the control contained elements that would increase self-other overlap. It was predicted that the modifications made to the other two conditions would alter participants' ratings of self-other overlap with a great enough magnitude to observe differences. However, in the end, the data demonstrated that this was not the case.

The second key issue was that participants neither completed a pre-test to assess their level of self-other overlap before completing the intervention, nor were they assigned to a no-intervention control condition. These aspects of the design make it so that it is not possible to directly assess the effect of completing an intervention. In retrospect, having a pre-test or no-intervention control would help to provide more insight into why Study 4 did not work as anticipated. Thus, future studies would benefit from incorporating these design elements.

Conclusion

Overall, the findings from this work suggest that ratings of self-other overlap are associated with willingness to work with people with disability as part of one's career. More research is needed to understand whether willingness translates into people serving PWD

through their work, and to explore whether interventions designed to increase inclusion of the other in the self increase willingness to work with PWD. However, this work does suggest the sense of closeness and connection people feel toward PWD may be important to take into consideration when developing interventions targeted toward promoting working with people with disability.

Table 1. Overall study and sample descriptive statistics for Study 1.

	Overall M (SD)	Sample A M (SD) / %	Sample B M (SD) / %	*t*	*p*
Self-Other Overlap	3.45 (1.60)	3.35 (1.60)	3.50 (1.59)	*t* (1, 621) = -1.07	.29
Openness	65.56 (28.39)	68.69 (28.23)	63.97 (28.37)	*t* (1, 620) = 1.97	.05
Primary	37.53 (28.72)	38.69 (29.81)	36.94 (28.17)	*t* (1, 620) = .717	.47

Note. Self-Other: 1 = very little self-other overlap (i.e., the circles in the image are just touching), 7 = quite a bit of self-other overlap (i.e., the circles in the image are almost completely overlapping). Openness = Openness to working with people with disability: 0 = *Not at All Open*, 100 = *Very Open*. Primary = Likelihood of working primarily with people with disability: 0 = *Not at All Likely*, 100 = *Very Likely*.

Table 2. Bivariate correlations for Study 1 variables.

	Self-Other Overlap	Openness	Primary	Female	Sex
Self-Other Overlap	-				
Openness	.400*	-			
Primary	.374*	.582*	-		
Sex	-.009	.117*	.080*	-	
Age	.001	.010	.070	-.069	-

Note. The asterisks (*) identify significant ($p < .05$) Pearson's R correlation coefficients. Openness = Openness to Work with People with Disability. Primary = Likelihood of Working Primarily with People with Disability. Sex: 0 = *Male*, 1 = *Female*.

Table 3. Multiple regression analyses for openness to working with people with disability (Study 1).

	B	β	*t*	*p*	R^2	*F*	df	*p*
Step 1					.014	4.27	2, 618	.014
Sex	6.86	.177	2.91	.004				
Age	.37	.016	.39	.697				
Constant	61.16							
Step 2					.171	43.51	3, 617	<.001
Sex	7.11	.121	3.30	.001				
Age	.24	.010	.27	.784				
Constant	61.02							
Self-Other Overlap	7.13	.401	10.97	<.001				

Note. Openness to working with people with disability: 0 = *Not at All Open*, 100 = *Very Open*. Sex: 0 = *Male*, 1 = *Female*. Age (M = 18.71) and Self-Other Overlap (M = 3.45) in this model were mean-centered.

Table 4. Multiple regression analyses for likelihood of working primarily with people with disability (Study 1).

	B	β	*t*	*p*	R^2	*F*	df	*p*
Step 1					.012	3.72	2, 618	.025
Sex	5.00	.084	2.10	.037				
Age	1.69	.076	1.89	.060				
Constant	34.31							
Step 2					.152	36.91	3, 617	<.001
Sex	5.27	.089	2.38	.018				
Age	1.69	.076	2.04	.042				
Constant	34.21							
Self-Other Overlap	6.75	.375	10.10	<.001				

Note. Likelihood of working primarily with people with disability: 0 = *Not at All Likely*, 100 = *Very Likely*. Sex: 0 = male, 1 = female. Age (M = 18.71) and Self-Other Overlap (M = 3.45) in this model were mean-centered.

Table 5. Study 2 descriptive statistics for study variables.

	M	SD	Median
Self-Other Overlap	3.32	1.69	3
Openness	67.44	27.40	71
Primary	40.82	28.71	35
% Time	28.49	25.43	25
In-group/We-ness	2.80	2.12	3
Similarity	2.60	1.69	3
State Empathy	4.72	1.18	4.83
Trait Empathy (TEQ)	2.97	.53	3.00
Attitudes (SADP)	3.39	.63	3.37
Warmth	4.40	1.20	5
Competence	4.07	1.32	4
Diversity of Contact	14.04	4.37	14
Frequency of Contact	1.44	.71	1.30
Social Desirability	5.79	2.74	6

Note. Self-Other Overlap: 1 = no overlap, 7 = highest level of overlap. Openness: 0 = Not at All Open, 100 = Very Open. Primary: 0 = Not at All Likely, 100 = Very Likely. % Time: 0-100%. In-group/We-ness: 0 = Not at All, 6 = Extremely. Similarity: 0 = Not Similar at All, 6 = Very Similar. State Empathy: 0 = Not at All, 6 = Extremely, averaged across 6 items. Trait Empathy: 0 = Never, 4 = Always, averaged across 16 items. Attitudes: 0 = I disagree very much, 5= I agree very much, averaged across 24 items. Warmth: 0 = Strongly Disagree, 6 = Strongly Agree. Competence: 0 = Strongly Disagree, 6 = Strongly Agree. Diversity of Contact: 0 = No, 1 = Yes, summed across 20 items. Frequency of Contact: 0 = Never, 4 = Very often, averaged across 20 items. Social Desirability: 0 = False, 1 = True, summed across 13 items.

Table 6. Study 2 Bivariate correlations.

	SOO	Openness	Primary	% Time	State Empathy	Trait Empathy	Attitudes	Warmth	Competence	Div. of Contact	Freq. of Contact	We-ness	Similarity	Age	College Level	Gender
Openness	.156*	1														
Primary	.220**	.577**	1													
% Time	.245**	.433**	.581**	1												
State Empathy	.139	.183*	.138	.109	1											
Trait Empathy (TEQ)	.173*	.251**	.131	.270**	.429**	1										
Attitudes	.161*	.364**	.130	.282**	.181*	.491**	1									
Warmth	.105	.229**	.332**	.198**	.448**	.291**	.087	1								
Competence	.096	.307**	.202**	1.24	.286**	.257**	.354**	.482**	1							
Div. of Contact	.253**	.126	.142	.250**	.139	-.022	.011	.130	.159*	1						
Freq. of Contact	.345**	.284**	.323**	.381**	.297**	.188*	.265**	.244**	.302**	.790**	1					
We-ness	.393**	.047	.201**	.099	.191*	.151	-.002	.115	-.013	.149	.226**	1				
Similarity	.254**	.221**	.319**	.241**	.077	.123	.114	.244**	.271**	.253**	.367**	.411**	1			
Age	.127	.110	.121	-.009	-.083	-.005	.075	.015	-.108	.075	.133	.070	.087	1		
College Level	.047	.120	.138	-.005	-.145	.009	.017	.099	-.090	.059	.058	.049	.095	.655**	1	
Gender	.034	.136	.104	.288**	.303**	.476**	.226**	.192*	.223**	-.032	.129	-.013	.074	-.125	-.108	1
Social Desirability	.012	.061	.095	.104	.065	.199*	.135	.192*	.202**	-.145	-.096	.100	.074	-.021	.003	.048

Note: * = Correlation is significant at the 0.05 level (2-tailed). ** = Correlation is significant at the 0.01 level (2-tailed).

Table 7. Study 2 multiple regression analysis for self-other overlap, attitudes, and trait empathy predicting openness to working with people with disability.

	B	β	*t*	*p*	R^2	*F*	df	*p*
Step 1					.020	2.86	1, 141	.093
Self-Other Overlap	2.23	.141	1.69	.093				
Constant	66.06							
Step 2					.151	12.41	2, 140	<.001
Self-Other Overlap	1.491	.094	1.20	.233				
Attitudes	15.73	.365	4.64	<.001				
Constant	12.66							
Step 3					.159	8.76	3, 139	<.001
Self-Other Overlap	1.35	.085	1.08	.283				
Attitudes	13.54	.314	3.51	.001				
Trait Empathy	5.37	.106	1.18	.240				
Constant	4.17							
Step 4					.159	6.54	4, 138	<.001
Self-Other Overlap	1.36	.086	1.08	.280				
Attitudes	13.56	.314	3.50	.001				
Trait Empathy	4.93	.097	.97	.332				
Gender	1.03	.018	.20	.842				
Constant	4.71							

Note. Openness to working with patients with disability: 0 = Not at All Open, 100 = Very Open. Gender: 0 = man, 1 = woman. Self-other Overlap in this model was median-centered (Median = 3). Attitudes (M = 3.39) and Trait Empathy (M = 2.97) in this model were mean-centered.

Table 8. Study 2 multiple regression analysis for self-other overlap, attitudes, and trait empathy predicting primarily working with people with disability.

	B	β	*t*	*p*	R^2	*F*	df	*p*
Step 1					.051	7.25	1, 136	.008
Self-Other Overlap	3.87	.225	2.69	.008				
Constant	38.90							
Step 2					.063	4.51	2, 135	.013
Self-Other Overlap	3.65	.212	2.53	.013				
Attitudes	5.21	.110	1.32	.190				
Constant	21.21							
Step 3					.064	3.05	3, 134	.031
Self-Other Overlap	3.59	.209	2.47	.015				
Attitudes	4.31	.091	.96	.337				
Trait Empathy	2.33	.041	.44	.664				
Constant	17.36							
Step 4					.065	2.31	4, 133	.061
Self-Other Overlap	3.610	.210	2.48	.015				
Attitudes	4.36	.093	.97	.333				
Trait Empathy	1.40	.025	.24	.814				
Gender	2.13	.034	.36	.722				
Constant	18.48							

Note. Primarily working with patients with disability: 0 = Not at All Likely, 100 = Very Likely. Gender: 0 = man, 1 = woman. Self-other Overlap in this model was median-centered (Median = 3). Attitudes (M = 3.39) and Trait Empathy (M = 2.97) in this model were mean-centered.

Table 9. Study 2 multiple regression analysis for self-other overlap, attitudes, and trait empathy predicting anticipated percent time working with people with disability.

	B	β	*t*	*p*	R^2	*F*	df	*p*
Step 1					.052	7.86	1, 142	.006
Self-Other Overlap	3.44	.229	2.80	.006				
Constant	26.89							
Step 2					.109	8.62	2, 141	<.001
Self-Other Overlap	2.93	.195	2.42	.017				
Attitudes	9.80	.240	2.99	.003				
Constant	-6.29							
Step 3					.130	6.96	3, 140	<.001
Self-Other Overlap	2.72	.181	2.26	.025				
Attitudes	6.55	.161	1.77	.079				
Trait Empathy	8.06	.166	1.83	.069				
Constant	-19.16							
Step 4					.150	6.92	4, 139	<.001
Self-Other Overlap	2.80	.186	2.34	.020				
Attitudes	6.59	.162	1.79	.075				
Trait Empathy	4.34	.090	.90	.370				
Gender	8.80	.160	1.80	.074				
Constant	-14.25							

Note. Anticipated percent time working with patients with disability: 0-100%. Gender: 0 = man, 1 = woman. Self-other Overlap in this model was median-centered (Median = 3). Attitudes (M = 3.39) and Trait Empathy (M = 2.97) in this model were mean-centered.

Table 10. Study 3 means, standard deviations, and median values for the study variables for each target group.

	Disability			Homeless			Low-Income			HIV			Veterans			Refugees			WSA			Gay/Lesbian			Business			Older Adults		
	M	SD	Median	M	SD	Median	M	SD	Median	M	SD	Median	M	SD	Median	M	SD	Median	M	SD	Median	M	SD	Median	M	SD	Median	M	SD	Median
Self-Other Overlap	3.30	1.73	3	2.18	1.47	2	2.85	1.66	2	1.59	1.28	1	2.04	1.81	2	2.04	1.49	1	2.93	1.87	2	3.57	1.82	3	3.86	1.99	4	4.44	1.64	4
We-ness	1.67	1.88	1	1.00	1.54	0	1.68	1.83	1	1.00	1.64	0	1.49	1.85	1	1.14	1.63	0	2.04	2.05	1	1.74	2.02	1	3.31	1.95	4	2.15	1.93	2
Similarity	1.74	1.70	1	1.15	1.52	0	1.81	1.77	1	1.31	1.60	1	1.65	1.74	1	1.30	1.61	1	1.96	2.03	1	2.10	1.97	2	3.54	1.92	4	2.35	1.68	2
State Empathy	4.62	1.45	5.00	3.83	1.54	4.00	3.80	1.44	4.00	3.86	1.54	4.00	4.39	1.53	4.67	4.05	1.54	4.00	4.70	1.47	5.00	3.53	1.74	3.75	3.23	1.61	3.00	3.92	1.44	4.00
Feeling Thermometer	74.59	18.53	76	59.50	22.02	60	62.45	20.40	62	62.55	20.68	60	74.21	19.91	76.5	64.16	22.14	64	78.55	19.10	84	71.34	23.14	75	67.66	21.61	68	70.88	18.58	73
Warmth	4.22	1.34	4	3.04	1.50	3	3.39	1.32	3	3.45	1.42	3	3.59	1.38	3	3.49	1.43	3	3.50	1.38	3	3.91	1.44	4	3.17	1.30	3	3.82	1.30	4
Competence	3.74	1.37	4	2.94	1.56	3	3.54	1.38	3	4.04	1.49	4	4.39	1.44	5	3.71	1.50	4	4.23	1.54	4	4.45	1.56	5	4.71	1.29	5	4.00	1.35	4

Note. Self-Other Overlap: 1 = no overlap, 7 = highest level of overlap. We-ness: 0 = Not at All, 6 = Extremely. Similarity: 0 = Not Similar at All, 6 = Very Similar. State Empathy: 0 = Not at All, 6 = Extremely, averaged across 6 items. Feeling Thermometer: 0 = Cold/Unfavorable, 100= Warm/Favorable. Warmth: 0 = Strongly Disagree, 6 = Strongly Agree. Competence: 0 = Strongly Disagree, 6 = Strongly Agree.

Table 11. Study 3 bivariate correlation values for the association between each study variable and the choice to either indicate a desire to work with or not work with a group of people.

	Disability		Homeless		Low-Income		HIV		Veterans		Refugees		WSA		Gay/Lesbian		Business		Older Adults	
	MHW	LHW	MHW	LHW	MHW	LHW	MHW	LHW	MHW	LHW	MHW	LHW	MHW	LHW	MHW	LHW	MHW	LHW	MHW	LHW
Self-Other Overlap	.220**	-.136*	.179**	-.138*	.256**	-.059	.080	-.111	.305**	-.152*	.090	-.180**	.253**	-.068	.188**	-.264**	.433**	-.401**	.126	-.144*
We-ness	.058	-.030	.099	-.083	.223**	-.051	-.048	.017	.205**	-.135*	-.042	-.128	.224**	-.077	.150*	-.081	.396**	-.308**	.095	-.139*
Similarity	.024	.000	.084	-.064	.192**	-.063	-.145*	.037	.174*	-.180**	.031	-.145*	.276**	-.078	.231**	-.090	.437**	-.317**	.145*	-.181**
State Empathy	.183**	-.295**	.170*	-.189**	.153*	-.150*	.140*	-.107	.089	-1.95**	.164*	-.201**	.212**	-.155*	.051	-.194**	.227**	-.107	.063	-.040
Feeling Thermometer	.189**	-.216**	.243**	-.315**	.209**	-.155*	.201**	-.180**	.256**	-.198**	.269**	-.285**	.274**	-.201**	.241**	-.181**	.387**	-.203**	.078	-.143*
Warmth	.061	-.106	.251**	-.252	.060	-.035	.036	.015	.072	-.052	.049	-.072	.200**	-.176**	.052	-.100	.034	.025	-.020	-.001
Competence	.029	-.198**	.210**	-.239	.107	-.151*	.043	-.015	.033	-.023	-.016	-.121	.206**	-.210**	.074	-.113	.075	.012	-.061	.011
Trait Empathy	.088	-.284**	.107	-.039	-.005	.035	-.002	.053	-.227**	-.009	.080	-.050	.172*	-.045	-.071	-.067	-.114	.127	-.134	.222**
Att. Toward PWD	.051	-.177*																		

Note: MHW = Selecting group as most interested in working to help. LHW = Selecting group as least interested in working to help. * = Correlation is significant at the 0.05 level (2-tailed). ** = Correlation is significant at the 0.01 level (2-tailed).

Table 12. Study 3 Bivariate correlations for variables related to people with disability.

	MWH	LWH	SOO	We-ness	Similarity	State Empathy	Trait Empathy	Feeling Thermometer	Att. Toward PWD	Warmth	Competence	Age	College Level	Gender
LHW	-.383**	1												
SOO	.220**	-.136	1											
We-ness	.058	-.030	.468**	1										
Similarity	.024	.000	.403**	.726**	1									
State Empathy	.183**	-.295**	.192**	.168*	.057	1								
Trait Empathy	.119	-.284**	.192**	.078	.118	.447**	1							
Feeling Thermometer	.189**	-.216**	.345**	.296**	.248**	.509**	.374**	1						
Att. Toward PWD	.051	-.177*	.172*	.086	.079	.323**	.586**	.324**	1					
Warmth	.061	-.106	.259**	.239**	.196**	.559**	.408**	.560**	.264**	1				
Competence	.029	-.198**	.263**	.315**	.277**	.373**	.363**	.563**	.395**	.592**	1			
Age	-.066	.048	.048	-.095	.005	-.092	-.026	.019	.034	-.062	.055	1		
College Level	-.090	.188**	.005	-.060	-.001	-.124	-.123	.009	.008	-.041	.095	.686**	1	
Gender	.112	-.084	-.034	.132	.149*	.176**	.234**	.173*	.218**	.170*	.172*	-.033	-.114	1
Social Desirability	.113	-.082	.108	-.011	-.024	-.044	.175*	-.082	.200**	-.035	.109	.051	.023	.016

Note: MHW = Selecting group as most interested in working to help. LHW = Selecting group as least interested in working to help. SOO = Self-other overlap with people with disability. * = Correlation is significant at the 0.05 level (2-tailed). ** = Correlation is significant at the 0.01 level (2-tailed).

Table 13. Study 3 multiple logistic regression analysis for self-other overlap, attitudes, and trait empathy predicting selecting people with disability as a group participants were most interested in working to help.

	B	OR	*95% OR CI*	*p*	Cox & Snell R^2	X^2	df	*p*
Step 1					.053	9.98	1	.002
Self-Other Overlap	.278	1.32	1.11 – 1.58	.002				
Constant	-.355							
Step 2					.053	9.99	2	.007
Self-Other Overlap	.277	1.32	1.10 – 1.58	.002				
Attitudes	.027	1.03	0.58 – 1.82	.926				
Constant	-.355							
Step 3					.061	11.62	3	.009
Self-Other Overlap	.266	1.31	1.09 – 1.56	.004				
Attitudes	-.238	0.79	0.39 – 1.60	.508				
Trait Empathy	.538	1.71	0.74 – 3.96	.208				
Constant	-.348							
Step 4					.075	14.37	4	.006
Self-Other Overlap	.283	1.33	1.11 – 1.59	.003				
Attitudes	-.330	0.72	0.35 – 1.48	.370				
Trait Empathy	.475	1.61	0.69 – 3.77	.275				
Gender	.560	1.75	0.90 – 3.42	.101				
Constant	-.723							

Note. Selecting people with disability: 0 = No, 1 = Yes. Gender: 0 = man, 1 = woman. Self-other Overlap in this model was median-centered (Median = 3). Attitudes (M = 3.18) and Trait Empathy (M = 2.75) in this model were mean-centered.

Table 14. Study 3 multiple logistic regression analysis for self-other overlap, attitudes, and trait empathy predicting selecting people with disability as a group participants were least interested in working to help.

	B	OR	*95% OR CI*	*p*	Cox & Snell R^2	X^2	df	*p*
Step 1					.016	2.96	1	.086
Self-Other Overlap	-.174	0.84	0.69 – 1.03	.093				
Constant	-1.01							
Step 2					.043	8.15	2	.017
Self-Other Overlap	-.150	0.86	0.70 – 1.06	.158				
Attitudes	-.760	0.47	0.24 – 0.91	.026				
Constant	-1.05							
Step 3					.071	13.56	3	.004
Self-Other Overlap	-.131	0.88	0.71 – 1.08	.226				
Attitudes	-.201	0.82	0.36 – 1.85	.630				
Trait Empathy	-1.06	0.35	0.14 – 0.87	.025				
Constant	-1.09							
Step 4					.072	13.88	4	.008
Self-Other Overlap	-.136	0.87	0.71 – 1.08	.210				
Attitudes	-.172	0.84	0.37 – 1.92	.682				
Trait Empathy	-1.03	0.36	0.14 – 0.90	.028				
Gender	-.209	0.81	0.39 – 1.67	.569				
Constant	-.959							

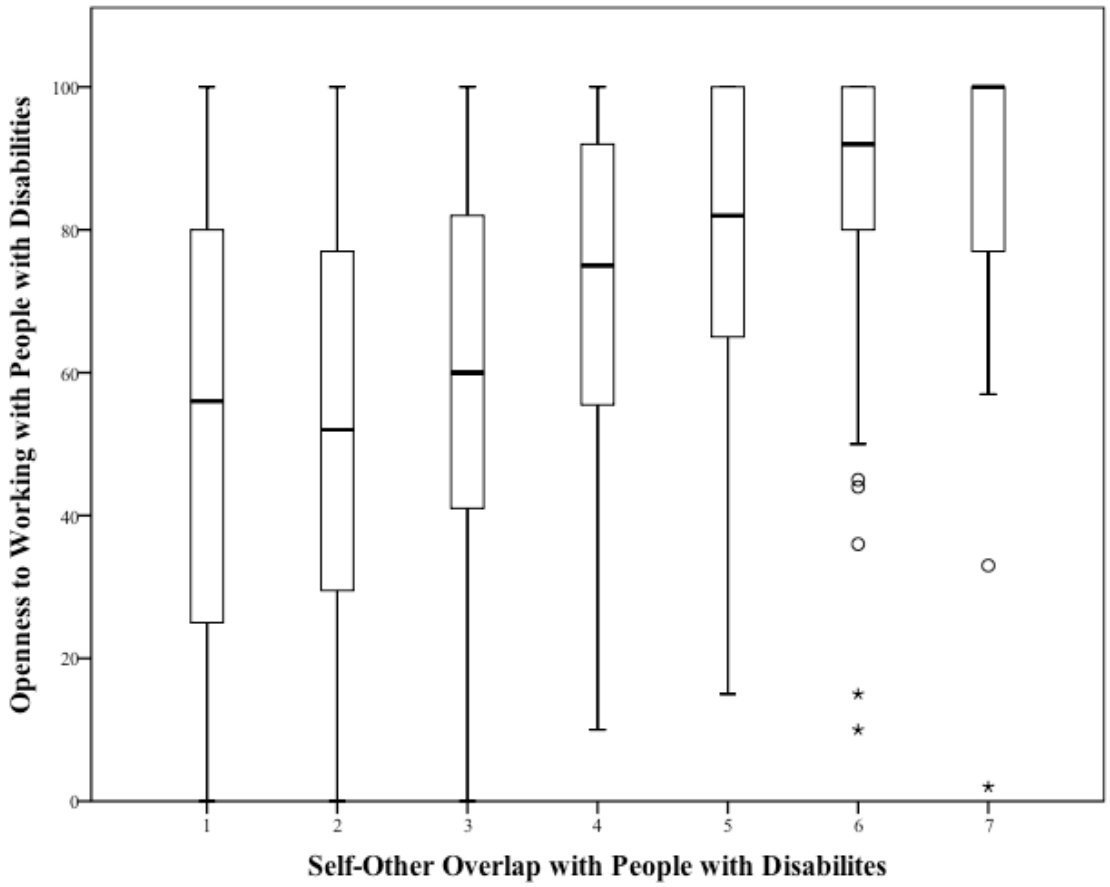
Note. Selecting people with disability: 0 = No, 1 = Yes. Gender: 0 = man, 1 = woman. Self-other Overlap in this model was median-centered (Median = 3). Attitudes (M = 3.18) and Trait Empathy (M = 2.75) in this model were mean-centered.

Table 15. Overall study descriptive statistics and comparisons by condition for Study 4.

	Friends, Family, Classmates M (SD) [n = 81]		Standard M (SD) [n = 81]		Clients M (SD) [n = 79]	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Feelings Toward PWD						
Self-other Overlap	3.93 (1.74)	4.11 (1.81)	3.61 (1.73)	3.57 (1.80)	3.90 (1.58)	3.80 (1.51)
We-ness	3.62 (2.08)	3.52 (2.06)	3.42 (1.99)	3.53 (2.02)	3.27 (2.13)	3.31 (2.03)
Similarity	3.10 (1.60)[b]	3.34 (1.69)[b]	2.94 (1.87)[c]	3.21 (1.67)[c]	2.85 (1.69)	2.96 (1.64)
Openness	71.57 (28.80)[b]	64.16 (29.50)[b]	61.54 (31.19)	57.75 (31.07)	69.18 (25.96)	65.42 (27.82)
Primary	42.67 (25.82)	40.53 (24.38)	37.01 (30.27)	38.10 (29.63)	38.06 (29.71)	42.37 (27.82)
% Time	28.93 (21.64)	29.04 (23.77)	22.27 (18.88)[c]	26.76 (23.23)[c]	30.42 (28.61)	28.25 (24.49)
State Empathy	4.35 (1.03)	4.38 (1.15)	4.33 (1.00)	4.12 (1.21)	4.33 (1.10)	4.30 (1.07)
Attitudes Toward PWD	3.64 (.56)[a]	3.59 (.70)	3.49 (.56)	3.46 (.62)	3.38 (.62)[a]	3.37 (.71)
Warmth	4.47 (1.16)	4.40 (1.40)	4.35 (1.21)	4.36 (1.28)	4.23 (1.09)	4.22 (1.17)
Competence	4.44 (1.35)	4.53 (1.26)	4.39 (1.35)	4.55 (1.26)	4.23 (1.17)	4.26 (1.24)
Feeling Thermometer	75.80 (17.29)	77.19 (16.12)	76.90 (17.22)	78.53 (17.69)	71.87 (20.04)	75.47 (17.47)
Module Evaluation						
Easy to Understand	5.64 (.66)		5.51 (.82)		5.42 (.93)	
Appropriate Length	5.41 (.92)		5.42 (1.05)		5.43 (8.12)	
Useful	5.41 (.83)		5.30 (1.08)		5.34 (.99)	
Interesting	4.96 (.90)[a]		4.65 (1.16)		4.53 (1.06)[a]	
Increased Comfort	4.93 (1.01)	4.77 (1.11)	4.57 (1.32)	4.43 (1.25)	4.62 (1.06)	4.67 (1.02)
Increased Knowledge	5.15 (.95)	5.01 (1.06)	4.79 (1.30)	4.68 (1.27)	4.82 (1.20)	4.81 (1.20)
Changed Interactions	4.48 (1.29)	4.43 (1.15)	4.22 (1.30)	4.16 (1.30)	4.17 (1.27)	4.27 (1.19)
Recommend	4.72 (1.18)	4.58 (1.15)	4.40 (1.32)[e]	4.68 (1.26)[e]	4.54 (1.16)	4.55 (1.21)
Participant Characteristics						
Trait Empathy	2.92 (.41)	2.88 (.44)	2.88 (.48)[e]	2.76 (.54)[e]	2.87 (.39)[d]	2.74 (.46)[d]
Age	18.44 (.95)		18.44 (.74)		18.91 (1.90)	
Social Desirability	5.32 (2.61)	5.77 (2.73)	4.90 (2.95)	5.24 (2.89)	5.51 (2.73)	5.57 (2.87)
Time to Follow-up		8.27 (3.24)		8.43 (3.08)		8.54 (3.31)

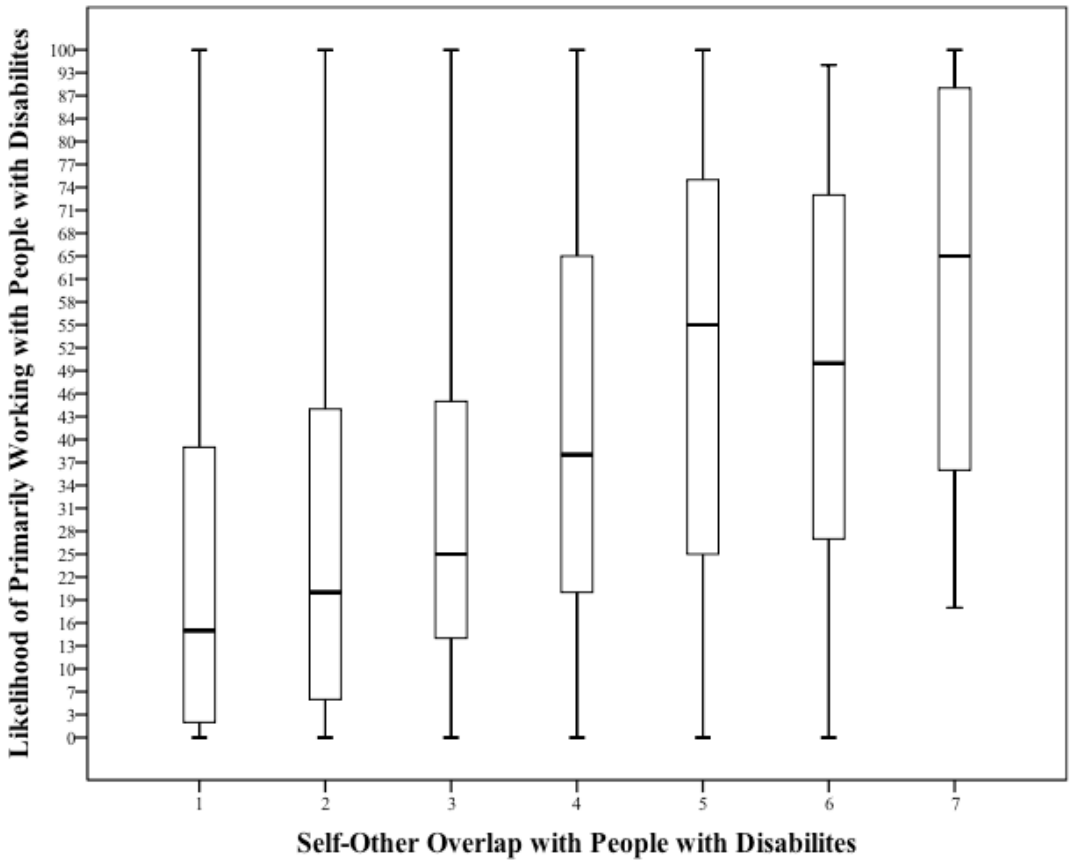
Note: Differences between means evaluated using Tukey HSD post hoc tests. Differences in means within condition between Time 1 and Time 2 were evaluated using paired-samples t-tests. Values with matching superscripts in the same row are significantly different from one another ($p < .05$).

Figure 1. Boxplot of openness to working with people with disability by level of self-other overlap.



Note. Openness to working with people with disability: 0 = *Not at All Open*, 100 = *Very Open*. Self-Other: 1 = very little self-other overlap (i.e., the circles in the image are just touching), 7 = quite a bit of self-other overlap (i.e., the circles in the image are almost completely overlapping).

Figure 2. Boxplot of likelihood of working primarily with people with disability by level of self-other overlap.

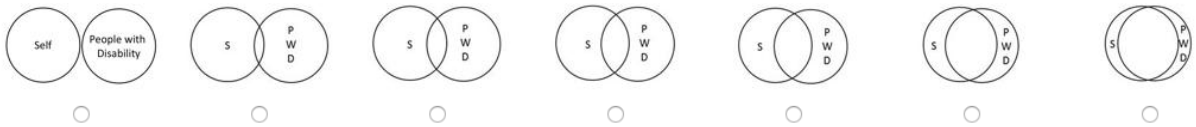


Note. Likelihood of working primarily with people with disability: 0 = *Not at All Likely*, 100 = *Very Likely*. Self-Other: 1 = very little self-other overlap (i.e., the circles in the image are just touching), 7 = quite a bit of self-other overlap (i.e., the circles in the image are almost completely overlapping).

Appendix A

Self-Other Overlap with People with Disability

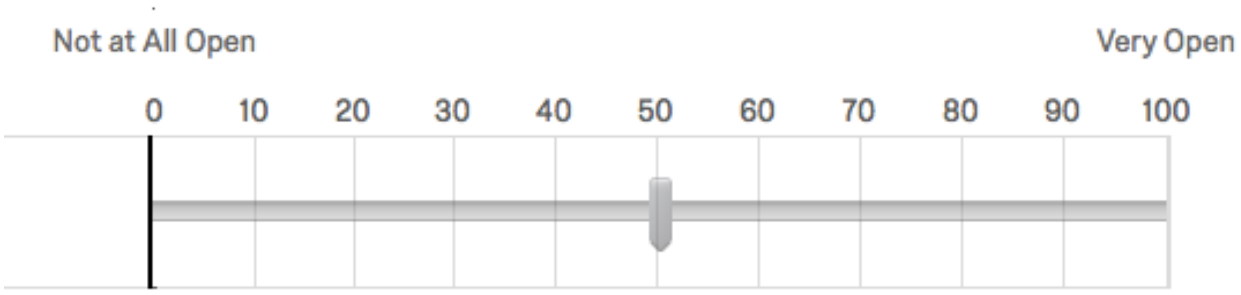
Please select the pair of circles that best represents your relationship with people with disability. [S = Self, PWD = People with Disability]



Appendix B

Openness to Working with People with Disability Scale (Study 1)

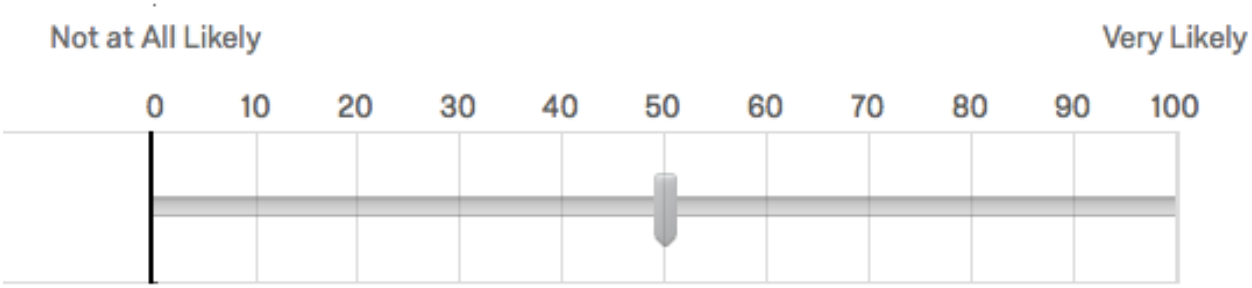
Please use the slider to indicate the extent to which you are open to working with people with disability as part of your future career.



Appendix C

Likelihood of Working Primarily with People with Disability Scale (Study 1)

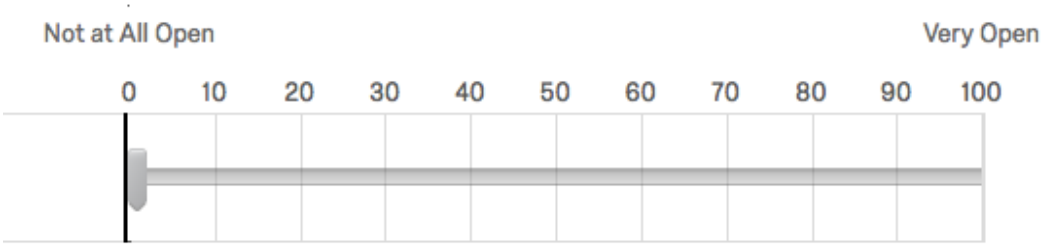
Please use the slider to indicate the extent to which you are likely to work primarily with people with disability as part of your future career.



Appendix D

Openness to Working with People with Disability Scale (Studies 2-4)

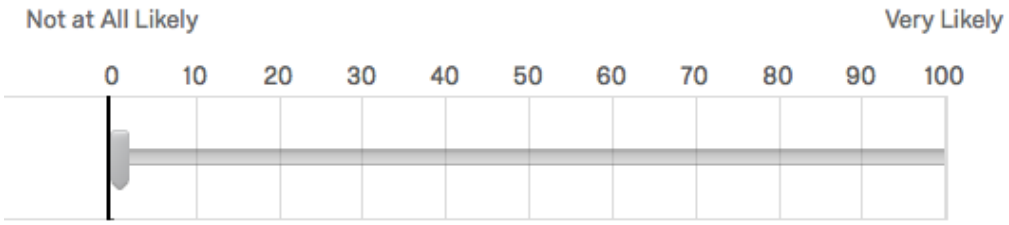
Please use the slider to indicate the extent to which you are open to working with people with disability as part of your future career.



Appendix E

Likelihood of Working Primarily with People with Disability Scale (Studies 2-4)

Please use the slider to indicate the extent to which you are likely to work primarily with people with disability as part of your future career.



Appendix F

Contact with Disabled Persons Scale

1. How often have you had a long talk with a person who is disabled?
2. How often have you had brief conversations with persons who are disabled?
3. How often have you eaten a meal with a person who is disabled?
4. How often have you contributed money to organization that help disabled persons?
5. How often have disabled persons discussed their lives or problems with you?
6. How often have you discussed your life or problems with a disabled person?
7. How often have you tried to help disabled persons with their problems?
8. How often have disabled persons tried to help you with your problems?
9. How often have you worked with a disabled client, student, or patient on the job?
10. How often have you worked with a disabled co-worker?
11. How often has a disabled friend visited you in your home?
12. How often have you visited disabled friends in their homes?
13. How often have you met a disabled person that you like?
14. How often have you met a disabled person that you dislike?
15. How often have you met a disabled person that you admire?
16. How often have you met a disabled person for whom you feel sorry?
17. How often have you been annoyed or disturbed by the behavior of a person with a disability?
18. How often have you been pleased by the behavior of a disabled person?
19. How often have you had pleasant experiences interacting with disabled persons?
20. How often have you had unpleasant experiences interacting with disabled persons?

Never = 0, Once or twice = 1, A few times = 2, Often = 3, Very often = 4

Appendix G

Toronto Empathy Questionnaire

Please read each statement carefully and rate how frequently you feel or act in the manner described. There are no right or wrong answers or trick questions. Please answer each question as honestly as you can.

	Never	Rarely	Sometimes	Often	Always
1. When someone else is feeling excited, I tend to get excited too.					
2. Other people's misfortunes do not disturb me a great deal.					
3. It upsets me to see someone being treated disrespectfully.					
4. I remain unaffected when someone close to me is happy.					
5. I enjoy making other people feel better.					
6. I have tender, concerned feelings for people less fortunate than me.					
7. When a friend starts to talk about his\her problems, I try to steer the conversation towards something else.					
8. I can tell when others are sad even when they do not say anything.					
9. I find that I am "in tune" with other people's moods.					
10. I do not feel sympathy for people who cause their own serious illnesses.					
11. I become irritated when someone cries.					
12. I am not really interested in how other people feel.					
13. I get a strong urge to help when I see someone who is upset.					
14. When I see someone being treated unfairly, I do not feel very much pity for them,					
15. I find it silly for people to cry out of happiness.					
16. When I see someone being taken advantage of, I feel kind of protective towards him\her.					

Scoring Item responses are scored according to the following scale for positively worded items 1, 3, 5, 6, 8, 9, 13, 16. Never = 0; Rarely = 1; Sometimes = 2; Often = 3; Always = 4. The following negatively worded items are reverse scored: 2, 4, 7, 10, 11, 12, 14, 15. Scores are summed to derive total for the Toronto Empathy Questionnaire.

Appendix H

Scale of Attitudes Toward Disabled Persons

The statements presented below express opinions or ideas about people who are disabled. There are many differences of opinion; Many people agree and many people disagree with each statement. We would like to know your opinion about them. Select the response option which best corresponds with how you feel about the statement. There are not right or wrong answers. You should work as quickly as you can, but don't rush. There is no time limit. Please respond to every statement.

1. Disabled children should not be provided with a free public education. R
2. Disabled people are not more accident prone than other people.
3. A disabled individual is not capable of making moral decisions. R
4. Disabled people should be prevented from having children. R
5. Disabled people should be allowed to live where and how they choose.
6. Adequate housing for disabled people is neither too expensive nor too difficult to build.
7. Rehabilitation programs for disabled people are too expensive to operate. R
8. Disabled people are in many ways like children. R
9. Disabled people need only the proper environment an opportunity to develop and express criminal tendencies. R
10. Disabled adults should be involuntarily committed to an institution following arrest. R
11. Most disabled people are willing to work.
12. Disabled individuals are able to adjust to a life outside an institutional setting.
13. Disabled people should not be prohibited from obtaining a driver's license.
14. Disabled people should live with others of similar disability. R
15. Zoning ordinances should not discriminate against disabled people by prohibiting group homes in residential districts.
16. The opportunity for gainful employment should be provided to disabled people.
17. Disabled children in regular classrooms have an adverse effect on other children. R
18. Simple repetitive work is appropriate for disabled people. R
19. Disabled people show a deviant personality profile. R
20. Equal employment opportunities should be available to disabled individuals.
21. Laws to prevent employers from discriminating against disabled people should be passed.
22. Disabled people engage in bizarre and deviant sexual activity. R
23. Disabled workers should receive at least the minimum wage establishes for their jobs.
24. Disabled individuals can be expected to fit into competitive society.

Half of the items were reverse coded (items: 1, 3, 4, 7, 8, 9, 10, 14, 17, 18, 19, and 22)

Appendix I

Disability Attitude Object Definition Open-Ended Responses

People with disabilities	I have been thinking about people with a mental disability
I think of all the experiences I have had disabled people are the most genuine and kindest people I have known and they are more than competent in a number of different ways and often have a way of seeing things other people cannot.	When i was in high school I would volunteer in a room with disabled children, about 5-10 of them. For an hour a day, 5 days a week i would go and play games with them and talk to them
Nobody in specific, maybe kids with special needs in certain schools	Anything from people with speech disabilities, learning disabilities, to people with physical defects
My cousin with a mild form of autism, and because my mom is a nurse I have gone and helped her take care of tons of young and old individuals who have types of disabilities and it is very eye opening	I have been thinking of people with physical disabliities such as missing limbs, blindness, deafness, and other types of disabilities such as down syndrome and autism
My friends cousin.	People I have gone to school with, people I have seen.
people with physical and mental disabilities	The people I have been thinking about are those with autism or downsyndrome
I have been thinking about people who can't walk, can't see (blind) and those who speak sign language since i have had personal contact and spoken to people who speak sign language	I have been thinking about a number of individuals such as those with mental illnesses like Down Syndrome and Autism and also physically handicap individuals like those paralyzed.
People with autism, down syndrome, etc.	People in wheelchairs, people with cognitive abilities
I have been thinking about people I've seen at my school and some distant friends siblings who have disabilities, down syndrome comes to mind first for me	I think of my cousin and I think he is one of the smartest people I have ever met, he just lacks in social cues. I find that to be true of most disabled people, so I have a big heart for them.
People with disabilities are just people. There is nothing that makes them different its something that makes them special	People with cerebral palsey, down sydnrome, learning disabilities, disabilities due to injury, and any kind of disability one can have.
My neighbor, and people I have been with while volunteering.	People who have down syndrome, people who are not able to walk, hear or see.
Those who possess disabilities such as downsyndrome	My cousin who has an autism.
I have been thinking about people that work in YMCA and also people in my parish	SPECIAL NEEDS KIDS at my high school with Autism
my friends brother great kid	about an good experience i had with a disabled person
I have been thinking about people with a mental disability.	a friend of mine who is completely paralyzed due to living through a war
I have mainly been thinking about my friend's little brother with down syndrome and my boyfriend's little brother with autism.	A friend I know with spineabifada (can't spell but it prevents him from walking/having full motion control) My sister and people I know with severe learning disabilities, OCD, ADHA

People in Wheelchairs, my friends with Autism or severe ADHD	They are always happy, in their own world. As long as I see them being happy and enjoying life, then I do not have to feel sorry.
Disabled students I met at school and disabled adults I have oberved/occasionally interacted with in public settings	Most of them are within my family, but I have also been thinking about children and other adults who I have either come into contact with or worked with.
My basketball coaches daughter is disabled and is very independent and kind-hearted. She loves the movie pitch-perfect and is overall a warm person.	I have been thinking about my cousin as he has gone through many therapists, the expenses my aunt has had to find the money for, the time she devotes to make sure he has what he needs, etc. He is decently high functioning but the littles of things can set him off. He is quite smart but the most simple tasks he has trouble grasping sometimes, he also is grade levels behind but has trouble being in a mainstreamed environment. He is the kindest most sweetest boy. He always tries to make someone smile and can know when you're upset. I hope one day he can have a steady job and grasp simple concepts, I know he can do it.
The people I have met with disabilities struggle but have shown their warmth and happiness as well. I have also met those who are unable to perform jobs properly, cannot speak, or act out in a way that tells me they aren't receiving proper attention.	
Usually small children or older people with disabilities.	
1. my brother had a stroke when he was younger and had trouble reading and writing, and also temperament issues; gets angry very easily 2. disabled people that work at my local store 3. disabled person that my coach has brought to our softball practice a few times	The people I have met with disabilities struggle but have shown their warmth and happiness as well. I have also met those who are unable to perform jobs properly, cannot speak, or act out in a way that tells me they aren't receiving proper attention.
Motivational speaker that came to speak to all the kids at a lacrosse event. Kids at my high school who were in several of my classes / friends with at school.	I have been thinking about my friends brother with MS and my assigned buddy when i volunteer who is on the spectrum.
My uncle, and friend with a disability I knew in high school.	I envisioned a mental disability, such as a learning disorder
I have been thinking of my high school special education students.	My friend from high school who has a mental disability and my distant cousin.
There are so many different disabilities that affect people in differing ways and degrees that it is impossible to generalize "disability" as one.	I have been thinking about my special needs campers I worked with over the summer as well as people I know with disabilities such as ADHD and OCD
I believe people with disability are able to live a life similar to mine, but they may need a little extra help	I have been thinking about my cousin who has downs and my friend's younger brother who has autism.
People with a mental or physical disability that can sometimes prevent them from functionally "normally" in life	I've been thinking about my best friend's brother, who is 17 years old and has a complicated and unknown disability.
people with learning disabilities or mental problems	I have been thinking of my roommate and my brother.
My mom's friend's son is disabled with autism	My aunt who is physically disabled
My cousin My brother in law My neighbors at home	my sister has adhd and sometimes acts out and doesn't pay attention but she is smart and capable of doing anything she wants to

Depends. Both people with mental and physical disabilities.	I have been thinking about my cousin and one of my former neighbors.
Homeless people	Kids from my town who have various disabilities
My brother was born prematurely with a disability.	I was thinking about my mother who has positively impacted my life the most.
I know a neighbor who has a disability, and she is very kind and competent is some manners.	I was thinking about my own experiences with people with disabilities during Best Buddies
The elderly people in nursing homes that I've interacted with.	disabled kids in my high school, and town, and my second cousin
I have been thinking about my older brother a lot while responding to these last several questions with regards to disabilities.	The person from my last college who is blind, my coworker at my last job, severly autistic people I have met while volunteering
My mother, who has a physical disability, and other people who have mental disabilities	People that have a disability but are still able to work and function on their own in a productive manner.
I have been thinking about my cousin. He has autism and, though it is severe, has been making great progress. I have also been thinking about a girl I went to high school with who was often incredibly rude to others, whether she meant to be or not, with a learning disability and mild autism.	The people that I have been thinking about are often people who volunteer with me at the hospital who are disabled and I have seen just how capable they are. And also a lot of the children who were in my group during my summer camp with whom I interacted a lot with.
When I think of disability, I think of people who may have disabilities with their body (like injured), people in wheel chairs, people with mental disabilities, and people with disorders like Down Syndrome.	I thought of people with mental disabilities as those are the kinds of kids with disabilities I've worked with i the past and was what first came to mind. I also took into consideration people with physically disabilities
Sometimes I thought about the children who had autism that I worked with, but I also thought about people who were perhaps missing an arm or leg.	I have been thinking about the incredibly strong and inspirational people I have learned about through reading autobiographies.
For the most part I have been thinking of mental disability, but for some I thought physical.	People with physical abilities, such as down syndrom or in a wheelchair.
I've been thinking about a couple of students from my High School who had down syndrome, and I got to know each of them pretty well.	People with any disability that has problems with being around people or just not getting along well with people are who I am thinking about.
Both myself and my close friends with hearing loss, but also those with learning disabilities that I have interacted with over the years.	I have thought about people with mental disabilities such as something as minor as ADHD. Also, those who are physically disabled.
People I know with disabilities or my friends and my experiences I've had with them.	My aunt, and disabled people that I know within my community.
Happy, usually smiling, always wants to talk and hug.	People in wheelchairs
childhood friend. neighbor.	My friend's sister in general.
I was familiar with many children that had down syndrome in my high school	That people with disabilities have a stereotype around them that they are bad people

Appendix J

Marlowe-Crowne Social Desirability Scale – Short Version (Form C)

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you.

1. It is sometimes hard for me to go on with my work if I am not encouraged. R
2. I sometimes feel resentful when I don't get my way. R
3. On a few occasions, I have given up doing something because I thought too little of my ability. R
4. There have been times when I felt like rebelling against people in authority even though I knew they were right. R
5. No matter who I'm talking to, I'm always a good listener.
6. There have been occasions when I took advantage of someone. R
7. I'm always willing to admit it when I make a mistake.
8. I sometimes try to get even rather than forgive and forget. R
9. I am always courteous, even to people who are disagreeable.
10. I have never been irked when people expressed ideas very different from my own.
11. There have been times when I was quite jealous of the good fortune of others. R
12. I am sometimes irritated by people who ask favors of me. R
13. I have never deliberately said something that hurt someone's feelings.

Appendix K

Job Skills Checklist

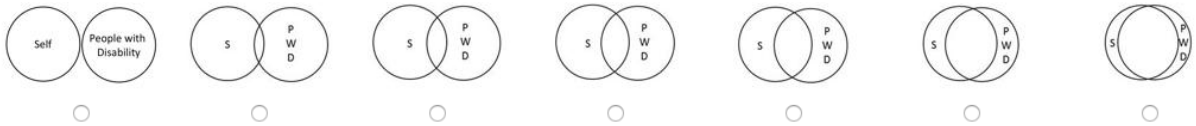
Please indicate whether each of the following is a skill that you feel like you possess. Select "Yes" if you do possess the skill, and "No" if you do not possess it. Make your decision as quickly as possible.

Yes	No	
☐	☐	setting work/committee goals
☐	☐	defining performance standards
☐	☐	managing people
☐	☐	motivating others
☐	☐	expressing feelings
☐	☐	setting priorities
☐	☐	conducting interviews
☐	☐	delegating responsibilities)
☐	☐	running meetings
☐	☐	writing letters/papers/proposals
☐	☐	reading volumes of material
☐	☐	sketching charts or diagrams
☐	☐	taking personal responsibility
☐	☐	managing an organization
☐	☐	persuading others
☐	☐	creating meaningful and challenging work
☐	☐	comparing results
☐	☐	mediating between people
☐	☐	enforcing rules and regulations
☐	☐	dispensing information
☐	☐	budgeting expenses
☐	☐	raising funds
☐	☐	interviewing prospective employees
☐	☐	calculating numerical data
☐	☐	encouraging others

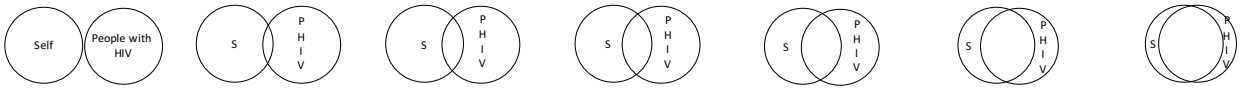
Appendix L

Self-Other Overlap Scale Examples

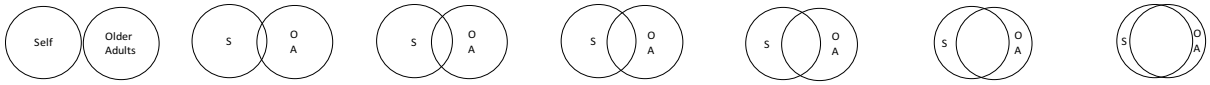
Please select the pair of circles that best represents your relationship with people with disability. [S = Self, PWD = People with Disability]



Please select the pair of circles that best represents your relationship with people living with HIV. [S = Self, PHIV = People Living with HIV]



Please select the pair of circles that best represents your relationship with older adults. [S = Self, OA = Older Adults]



Appendix M

Feeling Thermometer

Using the scale from 0 to 100, please tell us your personal feelings toward [target group]. As you do this task, think of an imaginary thermometer. The warmer or more favorable you feel toward the group, the higher the number you should give it (maximum = 100). The colder or less favorable you feel, the lower the number (minimum = 0). If you neither feel warm nor cold toward the group, rate it 50.

	0 50 100
[Target Group]	

Appendix N

Study 4 – Standard Control Intervention Condition

Speaking with Someone with a Disability

Brief Educational Module

It's not uncommon to feel a bit uncertain talking to or interacting with someone who has a physical, sensory, or intellectual disability. Socializing with people with disability should be no different from any other interaction. However, if you're not familiar with a given disability, you might fear either saying something offensive or doing the wrong thing by offering assistance.

Definition of Disability

There are many formal definitions of disability. Throughout this module, disability is used to refer to any condition that impairs or limits a person's function. The breadth of this definition highlights the diversity of disability, and how disability can include mental health issues, aging, and other cognitive or functional limitations. Disability can also include the physical, intellectual, and sensory limitations that are typically thought of as falling under this definition.

Throughout your life, you will come into contact with people with many different kinds of disability. For example, you may have a coworker who has a mental health issue that impacts his performance at work, or you may have community members that need meals delivered to their house because they are physically unable to shop for groceries themselves.

Disability Questions (Manipulated)

In this module, disability has been defined as: any condition that impairs or limits a person's function.

Describe someone who you believe would be considered a person with a disability based on this definition.

How does the person you described fit this definition of being a person with a disability?

Disability Questions (Manipulated)

In this module, disability has been defined as: any condition that impairs or limits a person's function.

Based on this definition, how frequently do you think people interact with people with disability?

Very Rarely Rarely Occasionally Frequently Very Frequently

Disability Questions (Manipulated)

In this module, disability has been defined as: any condition that impairs or limits a person's function.

Based on this definition, describe the types of situations in which you would interact with a person with a disability.

1 Be respectful, above all else. Someone who has a disability should be afforded the same amount of respect as anyone else. View others as people, not impairments. Focus on the person at hand and his/her individual personality. If you must put a "label" on the disability, it's best to ask what terminology he/she prefers and stick with the terms she chooses. In general, you should follow the "golden rule": treat others as you would like to be treated. If it is important to talk about a person having a disability, many, but not all, people with disability prefer "people first" language, which puts the name or person before the disability. For example, you would say "his sister, who has an amputated leg" rather than "his amputee sister".

More examples of appropriate people first language include, "Robert has cerebral palsy," "Leslie is partially sighted," or "Sarah uses a wheelchair," rather than saying someone "is mentally/physically challenged/handicapped" (both of which are often seen as patronizing terms) or referring to "the blind girl" or "the girl in the wheelchair." If possible avoid these blanket terms when referring to people. While some people find the word "disabled" unpleasant, others use it to describe themselves because they feel erased by treating it like a "bad word", and their disability is part of who they are. Take your lead from the person you are interacting with. If they refer to themselves as "disabled", ask if they are comfortable being described that way or why they choose to describe themselves like this. It will help you gain insight into their perspective.

Reading Check

- Write how you would describe a child who is diagnosed with Down Syndrome using person-first language.

2 Never talk down to someone with a disability. Regardless of their abilities, no one wants to be treated like a child or patronized. When you're speaking to someone with a disability, don't use child-like vocabulary, pet names, or a louder-than-average talking voice. Do not use patronizing gestures such as patting him/her on the back or head. These habits communicate that you don't think the person with a disability is capable of understanding you and that you equate him/her to a child. Use a regular speaking voice and vocabulary, and talk to him/her just like you would talk to someone without a disability. It is appropriate to slow down your speech if someone is hard of hearing or has a cognitive disability. Similarly, it may be acceptable to talk to people who have hearing loss in a louder than average voice, so that they are able to hear you. Usually, someone will mention it to you if you are speaking too quietly. You may also ask whether you are speaking too quickly, or ask him/her to tell you if you need to slow down or speak more clearly if necessary.

Don't feel like you have to reduce your vocabulary to the most basic words. The only time you may be asked to simplify your language is if you are talking to someone who has a severe intellectual or communication difficulty. However, if in doubt, speak casually and ask about their language needs.

3 Don't use labels or offensive terms, especially in a casual way. Labels and derogatory names are not appropriate and should be avoided in conversation. Identifying someone by his/her disability or assigning a label that is offensive (such as crippled or handicapped) is both hurtful and disrespectful. Always be careful of the things you say, censoring your language if necessary. Avoid names like moron, retard, cripple, spastic, midget, etc, at all times. Be careful not to identify someone by his/ her disability instead of his/her name or role. If you introduce someone with a disability, you don't need to introduce the disability as well. You can say "this is my co-worker, John" without saying "this is my co-worker, John, who has Down syndrome."

If you say a common phrase like "I gotta run!" to someone in a wheelchair, don't apologize. These types of phrases are not intended to be hurtful, and by apologizing you'll simply be drawing attention to your awareness of his/her disability.

Reading Check

Indicate which of the following are true:

1. It is offensive to say a phrase like "I will see you later" when talking to someone who is blind.
   True False
2. Describing someone in a wheelchair as crippled is likely to be considered offensive.
   True False
3. When talking to a person with any kind of disability it is important to change your language to be a simple as possible to ensure he/she understands what you are saying.
   True False

4 Speak directly to the person, not to an aide or translator. It's frustrating for someone with a disability to have to deal with people never talking directly to him/her if he/she has an assistant or a translator present. Equally, talk to a person in a wheelchair, rather than the person standing next to them. His/her body may not be working fully, but it doesn't mean his/her brain isn't! If you're speaking with someone who has a nurse to help or someone who is deaf and has a sign language interpreter, you should still always speak directly to the person who is disabled. Even if the person doesn't have typical listening body language, don't assume that he/she can't hear you. Speak to them.

5 Be patient and ask questions, if necessary. It can be tempting to speed along a conversation or to finish the sentences of someone with a disability, but doing so can be disrespectful. Always let him/her speak and work at his/her own pace, without you pushing him/her to talk, think, or move faster. Additionally, if you don't understand something someone says because he/she is speaking too slowly or too quickly, don't be afraid to ask questions. Assuming you know what someone said can be detrimental and embarrassing if you mishear him/her, so always double-check. Someone with a speech impediment might be particularly difficult to understand, so don't rush him/her to talk faster and ask him/her to repeat himself/herself if necessary.

Some people need extra time to process speech or turn their thoughts into spoken words (regardless of intellectual ability). It's okay if there are long pauses in the conversation.

Reading Check

Which of the following should you NOT typically do when interacting with a person with a disability:

A. Talk directly to a person's interpreter instead of the person herself.
B. Ask a person with a speech impediment to repeat himself if you do not understand what he says.
C. Wait for a person to finish communicating her thoughts, even if you can guess what she is trying to tell you.
D. Assume the person can hear you, even if he is not looking at you or communicating through his facial expressions that he is listening to you.

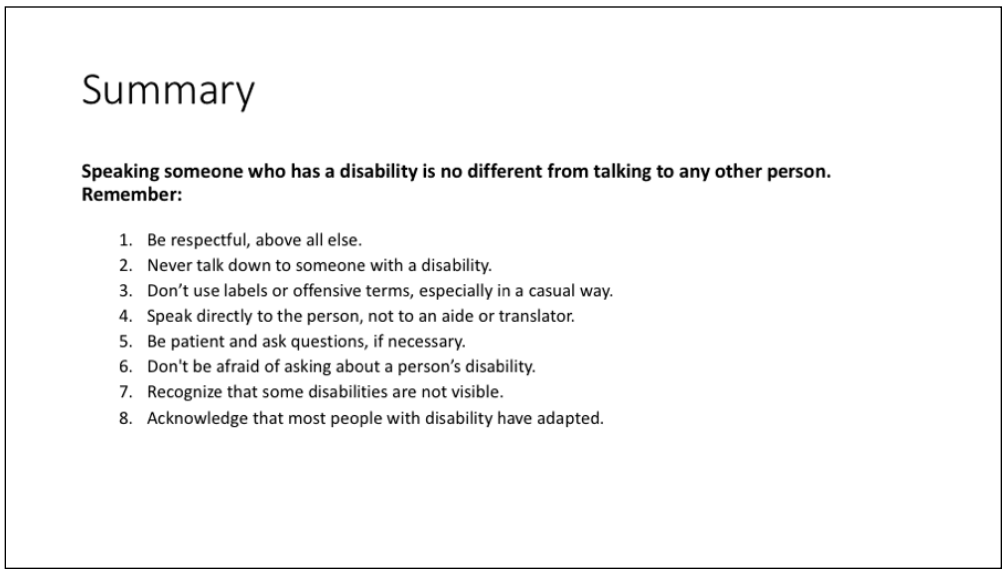
6 Don't be afraid of asking about a person's disability. It may not be appropriate to ask about someone's disability out of curiosity, but if you feel this might help you make a situation easier for him/her (like asking if he/she would prefer to take the elevator with you instead of the stairs if you see he/she has trouble walking), it is appropriate to ask questions. Chances are, he/she has been asked about his/her disability repeatedly over his/her life and knows how to explain it in a few sentences. If the disability resulted from an accident or the person finds the information too personal, he/she will most likely answer that he/she prefers not to discuss it. Assuming you know what his/her disability is can be offensive; it is better to ask than to presume knowledge.

7 Recognize that some disabilities are not visible. Sometimes called "invisible disabilities," disabilities that cannot be immediately seen are still disabilities. For example, a person may have a brain injury that impacts his/her ability to remember information. Having someone forget to do something important is frustrating, but it is not appropriate for you to blame him/her for his/her mistake. A good habit to be in is to act kindly and considerately towards everyone; you can't know someone's situation by just looking at him/her.

Some disabilities vary from day to day: someone who needed a wheelchair yesterday might only need a cane today. This doesn't mean he/she is faking it or "getting better," just that he/she has good days and bad days like everyone else.

8 Acknowledge that most people with disability have adapted. Some disabilities are present from birth, and others come later in life due to development, accident, or illness. However, as the disability develops, most people learn how to adapt, take care of themselves, and interact with the world independently. As a result, it can be offensive or annoying to assume that someone with a disability needs help or cannot contribute to a conversation in the same way as anyone else.

- Don't avoid asking someone with a disability to do a certain task or participate in a conversation because you worry they can't accomplish it.
- If you do offer to help or make an accommodation, make the offer genuine and specific. If you are offering from a place of genuine kindness, and not an assumption that the person cannot do something, you're less likely to offend.



Summary

Speaking someone who has a disability is no different from talking to any other person. Remember:

1. Be respectful, above all else.
2. Never talk down to someone with a disability.
3. Don't use labels or offensive terms, especially in a casual way.
4. Speak directly to the person, not to an aide or translator.
5. Be patient and ask questions, if necessary.
6. Don't be afraid of asking about a person's disability.
7. Recognize that some disabilities are not visible.
8. Acknowledge that most people with disability have adapted.

Appendix O

Study 4 – Classmates, Friends, & Family Members-Framed Intervention Condition

Speaking with Classmates, Friends, and Family Members with a Disability

Brief Educational Module

It's not uncommon to feel a bit uncertain talking to or interacting with classmates, friends, or family members who have a physical, sensory, or intellectual disability. Socializing with classmates, friends, or family members who have a disability is no different from any other interaction. However, if you're not familiar with a given disability, you might fear either saying something offensive or doing the wrong thing by offering assistance.

Definition of Disability

There are many formal definitions of disability. Throughout this module, disability is used to refer to any condition that impairs or limits a person's function. The breadth of this definition highlights the diversity of disability, and how disability can include mental health issues, aging, and other cognitive or functional limitations. Disability can also include the physical, intellectual, and sensory limitations that are typically thought of as falling under this definition.

Throughout your life, you will have classmates, friends and family members who have many different kinds of disability. For example, one of your classmates may have a mental health issue that impacts his class attendance, or, as your parents get older, they will likely need assistance as they become physically unable to do some tasks for themselves.

Disability Questions (Manipulated)

In this module, disability has been defined as: any condition that impairs or limits a person's function.

Describe one of your classmates, friends, or family members who you believe would be considered a person with a disability based on this definition.

How does the classmate, friend, or family member you described fit this definition of being a person with a disability ?

Disability Questions (Manipulated)

In this module, disability has been defined as: any condition that impairs or limits a person's function.

Based on this definition, how frequently do you probably interact with people with disability?

Very Rarely Rarely Occasionally Frequently Very Frequently

Disability Questions (Manipulated)

In this module, disability has been defined as: any condition that impairs or limits a person's function.

Based on this definition, describe the types of situations in which you have interacted with classmates, friends, or family members with disability.

1 Be respectful, above all else. A classmate, friend, or family member who has a disability should be afforded the same amount of respect as anyone else. View classmates, friends, and family members with disability as people, not impairments. Focus on the person at hand and his/her individual personality. If you must put a "label" on the disability, it's best to ask what terminology he/she prefers and stick with the terms she chooses. In general, you should follow the "golden rule": treat others as you would like to be treated. If it is important to talk about a classmate, friend, or family member having a disability, many, but not all, people with disability prefer "people first" language, which puts the name or person before the disability. For example, you would say "my grandmother with an amputated leg" rather than "my amputee grandmother".

More examples of appropriate people first language include, "my classmate Robert has cerebral palsy," "my friend Leslie is partially sighted," or "my aunt Sarah uses a wheelchair," rather than saying someone "is mentally/physically challenged/handicapped" (both of which are often seen as patronizing terms) or referring to "my blind cousin" or "my aunt in the wheelchair." If possible avoid these blanket terms when referring to people. While some people find the word "disabled" unpleasant, others use it to describe themselves because they feel erased by treating it like a "bad word", and their disability is part of who they are. Take your lead from the person you are interacting with. If they refer to themselves as "disabled", ask if they are comfortable being described that way or why they choose to describe themselves like this. It will help you gain insight into their perspective.

Reading Check

- Write how you would describe a child who is diagnosed with Down Syndrome using person-first language.

2 Never talk down to someone with a disability. Regardless of their abilities, no one wants to be treated like a child or patronized. When you're speaking to a classmate, friend, or family member with a disability, don't use child-like vocabulary, pet names, or a louder-than-average talking voice. Do not use patronizing gestures such as patting him/her on the back or head. These habits communicate that you don't think the person with a disability is capable of understanding you and that you equate him/her to a child. Use a regular speaking voice and vocabulary, and talk to him/her just like you would talk to any other classmate, friend, or family member. It is appropriate to slow down your speech if someone is hard of hearing or has a cognitive disability. Similarly, it may be acceptable to talk to people who have hearing loss in a louder than average voice, so that they are able to hear you. Usually, a person will mention it to you if you are speaking too quietly. You may also ask whether you are speaking too quickly, or ask him/her to tell you if you need to slow down or speak more clearly if necessary.

Don't feel like you have to reduce your vocabulary to the most basic words. The only time you may be asked to simplify your language is if you are talking to a classmate, friend, or family member who has a severe intellectual or communication difficulty. However, if in doubt, speak casually and ask about his/her language needs.

3 Don't use labels or offensive terms, especially in a casual way. Labels and derogatory names are not appropriate and should be avoided in conversation. Identifying a classmate, friend, or family member by his/her disability or assigning a label that is offensive (such as crippled or handicapped) is both hurtful and disrespectful. Always be careful of the things you say, censoring your language if necessary. Avoid names like moron, retard, cripple, spastic, midget, etc, at all times. Be careful not to identify a person by his/ her disability instead of his/her name or role. If you introduce a classmate, friend, or family member with a disability, you don't need to introduce the disability as well. You can say "this is my classmate, John" without saying "this is my classmate, John, who has Down syndrome."

If you say a common phrase like "I gotta run!" to someone in a wheelchair, don't apologize. These types of phrases are not intended to be hurtful, and by apologizing you'll simply be drawing attention to your awareness of his/her disability.

Reading Check

Indicate which of the following are true:

1. It is offensive to say a phrase like "I will see you later" when talking to someone who is blind.
   True False
2. Describing someone in a wheelchair as crippled is likely to be considered offensive.
   True False
3. When talking to a person with any kind of disability it is important to change your language to be a simple as possible to ensure he/she understands what you are saying.
   True False

4 Speak directly to the person, not to an aide or translator. It's frustrating for a classmate, friend, or family member with a disability to have to deal with people never talking directly to him/her if he/she has an assistant or a translator present. Equally, talk to a classmate, friend, or family member in a wheelchair, rather than the person standing next to them. His/her body may not be working fully, but it doesn't mean his/her brain isn't! If you're speaking with a person who has a nurse to help or a person who is deaf and has a sign language interpreter, you should still always speak directly to the classmate, friend, or family member who is disabled. Even if he/she doesn't have typical listening body language, don't assume that he/she can't hear you. Speak to them.

5 Be patient and ask questions, if necessary. It can be tempting to speed along a conversation or to finish the sentences of a classmate, friend, or family member with a disability, but doing so can be disrespectful. Always let him/her speak and work at his/her own pace, without you pushing him/her to talk, think, or move faster. Additionally, if you don't understand something a person says because he/she is speaking too slowly or too quickly, don't be afraid to ask questions. Assuming you know what someone said can be detrimental and embarrassing if you mishear him/her, so always double-check. A classmate, friend, or family member with a speech impediment might be particularly difficult to understand, so don't rush him/her to talk faster and ask him/her to repeat himself/herself if necessary.

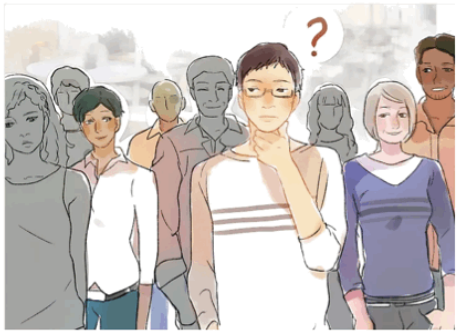
Some people need extra time to process speech or turn their thoughts into spoken words (regardless of intellectual ability). It's okay if there are long pauses in the conversation.

Reading Check

Which of the following should you NOT typically do when interacting with a person with a disability:

A. Talk directly to a person's interpreter instead of the person herself.
B. Ask a person with a speech impediment to repeat himself if you do not understand what he says.
C. Wait for a person to finish communicating her thoughts, even if you can guess what she is trying to tell you.
D. Assume the person can hear you, even if he is not looking at you or communicating through his facial expressions that he is listening to you.

6 Don't be afraid of asking about a person's disability. It may not be appropriate to ask about a classmate's, friend's, or family member's disability out of curiosity, but if you feel this might help you make a situation easier for him/her (like asking if he/she would prefer to take the elevator with you instead of the stairs if you see he/she has trouble walking), it is appropriate to ask questions. Chances are, he/she has been asked about his/her disability repeatedly over his/her life and knows how to explain it in a few sentences. If the disability resulted from an accident or the classmate, friend, or family member finds the information too personal, he/she will most likely answer that he/she prefers not to discuss it. Assuming you know what his/her disability is can be offensive; it is better to ask than to presume knowledge.

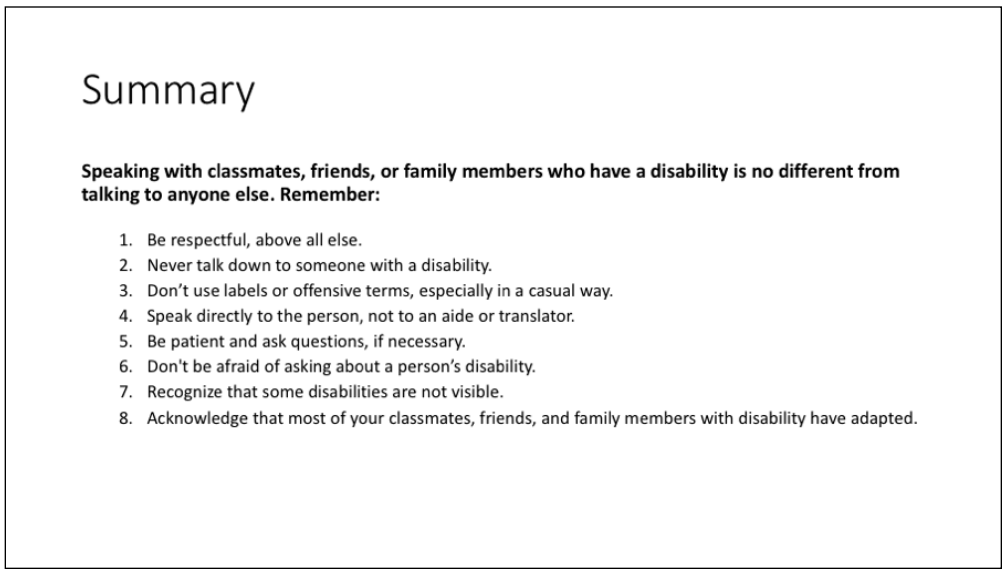


7 Recognize that some disabilities are not visible. Sometimes called "invisible disabilities," disabilities that cannot be immediately seen are still disabilities. For example, a friend may have a brain injury that impacts his/her ability to remember information. Having friend forget to do something important is frustrating, but it is not appropriate for you to blame him/her for his/her mistake. A good habit to be in is to act kindly and considerately towards everyone; you can't know someone's situation by just looking at him/her.

Some disabilities vary from day to day: a classmate who needed a wheelchair yesterday might only need a cane today. This doesn't mean he/she is faking it or "getting better," just that he/she has good days and bad days like you and the rest of your a classmates.

8 Acknowledge that most of your classmates, friends, and family members with disability have adapted. Some disabilities are present from birth, and others come later in life due to development, accident, or illness. However, as the disability develops, most people learn how to adapt, take care of themselves, and interact with the world independently. As a result, it can be offensive or annoying to assume that a classmate, friend, or family member with a disability needs help or cannot contribute to a conversation in the same way as any other person.

- Don't avoid asking a classmate, friend, or family member with a disability to do a certain task or participate in a conversation because you worry they can't accomplish it.
- If you do offer to help or make an accommodation, make the offer genuine and specific. If you are offering from a place of genuine kindness, and not an assumption that the person cannot do something, you're less likely to offend.



Summary

Speaking with classmates, friends, or family members who have a disability is no different from talking to anyone else. Remember:

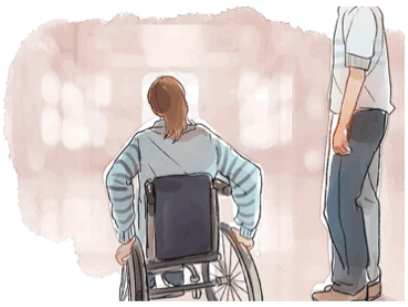
1. Be respectful, above all else.
2. Never talk down to someone with a disability.
3. Don't use labels or offensive terms, especially in a casual way.
4. Speak directly to the person, not to an aide or translator.
5. Be patient and ask questions, if necessary.
6. Don't be afraid of asking about a person's disability.
7. Recognize that some disabilities are not visible.
8. Acknowledge that most of your classmates, friends, and family members with disability have adapted.

Appendix P

Study 4 – Clients-Framed Intervention Condition

Speaking with Clients with a Disability

Brief Educational Module



It's not uncommon to feel a bit uncertain talking to or interacting with clients who have a physical, sensory, or intellectual disability. Engaging with clients who have a disability should be no different from engaging with any other clients. However, if you're not familiar with a given disability, you might fear either saying something offensive or doing the wrong thing by offering assistance.

Definition of Disability

There are many formal definitions of disability. Throughout this module, disability is used to refer to any condition that impairs or limits a client's function. The breadth of this definition highlights the diversity of disability, and how disability can include mental health issues, aging, and other cognitive or functional limitations. Disability can also include the physical, intellectual, and sensory limitations that are typically thought of as falling under this definition.

Throughout your career, you will come into contact with clients who have many different kinds of disability. For example, a client may have a mental health issue that impacts his interactions with you, or, you may have clients who need accommodations because they are physically unable to access your services in the same way as other clients.

Disability Questions (Manipulated)

In this module, disability has been defined as: any condition that impairs or limits a person's function.

Describe a potential client who you believe would be considered a person with a disability based on this definition.

How does the client you described fit this definition of being a person with a disability?

Disability Questions (Manipulated)

In this module, disability has been defined as: any condition that impairs or limits a person's function.

Based on this definition, how frequently will you probably interact with clients with disability?

Very Rarely Rarely Occasionally Frequently Very Frequently

Disability Questions (Manipulated)

In this module, disability has been defined as: any condition that impairs or limits a person's function.

Based on this definition, describe the types of situations in which you might interact with clients with disability.

1 Be respectful, above all else. A client who has a disability should be afforded the same amount of respect as any other client. View clients with disability as people, not impairments. Focus on the person at hand and his/her individual personality. If you must put a "label" on the disability, it's best to ask what terminology he/she prefers and stick with the terms she chooses. In general, you should follow the "golden rule": treat clients with disability as you would like to be treated. If it is important to talk about a client having a disability, many, but not all, people with disability prefer "people first" language, which puts the name or person before the disability. For example, you would say "a client who has an amputated leg" rather than "an amputee client".

More examples of appropriate people first language include, "a client who has cerebral palsy," "a client who is partially sighted," or "a client who uses a wheelchair," rather than saying someone "is mentally/physically challenged/handicapped" (both of which are often seen as patronizing terms) or referring to "the blind client" or "the client in the wheelchair." If possible avoid these blanket terms when referring to people. While some people find the word "disabled" unpleasant, others use it to describe themselves because they feel erased by treating it like a "bad word", and their disability is part of who they are. Take your lead from the client you are interacting with. If they refer to themselves as "disabled", ask if they are comfortable being described that way or why they choose to describe themselves like this. It will help you gain insight into their perspective.

Reading Check

- Write how you would describe a child who is diagnosed with Down Syndrome using person-first language.

2 Never talk down to someone with a disability. Regardless of their abilities, no one wants to be treated like a child or patronized. When you're speaking to a client with a disability, don't use child-like vocabulary, pet names, or a louder-than-average talking voice. Do not use patronizing gestures such as patting he/her on the back or head. These habits communicate that you don't think the person with a disability is capable of understanding you and that you equate him/her to a child. Use a regular speaking voice and vocabulary, and talk to him/her just like you would talk to any other client. It is appropriate to slow down your speech if someone is hard of hearing or has a cognitive disability. Similarly, it may be acceptable to talk to people who have hearing loss in a louder than average voice, so that they are able to hear you. Usually, a client will mention it to you if you are speaking too quietly. You may also ask whether you are speaking too quickly, or ask him/her to tell you if you need to slow down or speak more clearly if necessary.

Don't feel like you have to reduce your vocabulary to the most basic words. The only time you may be asked to simplify your language is if you are talking to a client who has a severe intellectual or communication difficulty. However, if in doubt, speak casually and ask about the client's language needs.

3 Don't use labels or offensive terms, especially in a casual way. Labels and derogatory names are not appropriate and should be avoided in conversation. Identifying a client by his/her disability or assigning a label that is offensive (such as crippled or handicapped) is both hurtful and disrespectful. Always be careful of the things you say, censoring your language if necessary. Avoid names like moron, retard, cripple, spastic, midget, etc, at all times. Be careful not to identify someone by his/ her disability instead of his/her name or role. If you introduce a client with a disability, you don't need to introduce the disability as well. You can say "this is my client, John" without saying "this is my client, John, who has Down syndrome."

If you say a common phrase like "I gotta run!" to someone in a wheelchair, don't apologize. These types of phrases are not intended to be hurtful, and by apologizing you'll simply be drawing attention to your awareness of his/her disability.

Reading Check

Indicate which of the following are true:

1. It is offensive to say a phrase like "I will see you later" when talking to someone who is blind.
   True False
2. Describing someone in a wheelchair as crippled is likely to be considered offensive.
   True False
3. When talking to a person with any kind of disability it is important to change your language to be a simple as possible to ensure he/she understands what you are saying.
   True False

4 Speak directly to the person, not to an aide or translator. It's frustrating for a client with a disability to have to deal with people never talking directly to him/her if he/she has an assistant or a translator present. Equally, talk to a client in a wheelchair, rather than the person standing next to them. His/her body may not be working fully, but it doesn't mean his/her brain isn't! If you're speaking with someone who has a nurse to help or someone who is deaf and has a sign language interpreter, you should still always speak directly to the client who is disabled. Even if someone doesn't have typical listening body language, don't assume that he/she can't hear you. Speak to them.

5 Be patient and ask questions, if necessary. It can be tempting to speed along a conversation or to finish the sentences of a client with a disability, but doing so can be disrespectful. Always let him/her speak and work at his/her own pace, without you pushing him/her to talk, think, or move faster. Additionally, if you don't understand something someone says because he/she is speaking too slowly or too quickly, don't be afraid to ask questions. Assuming you know what someone said can be detrimental and embarrassing if you mishear him/her, so always double-check. A client with a speech impediment might be particularly difficult to understand, so don't rush him/her to talk faster and ask him/her to repeat himself/herself if necessary.

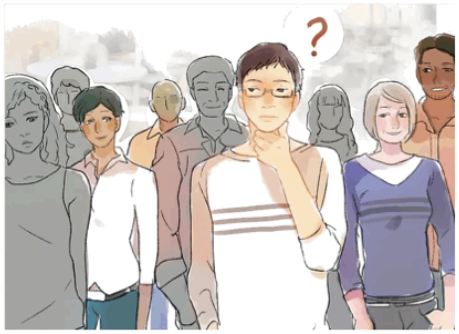
Some people need extra time to process speech or turn their thoughts into spoken words (regardless of intellectual ability). It's okay if there are long pauses in the conversation.

Reading Check

Which of the following should you NOT typically do when interacting with a person with a disability:

A. Talk directly to a person's interpreter instead of the person herself.
B. Ask a person with a speech impediment to repeat himself if you do not understand what he says.
C. Wait for a person to finish communicating her thoughts, even if you can guess what she is trying to tell you.
D. Assume the person can hear you, even if he is not looking at you or communicating through his facial expressions that he is listening to you.

6 Don't be afraid of asking about a person's disability. It may not be appropriate to ask about a client's disability out of curiosity, but if you feel this might help you make a situation easier for him/her (like asking if he/she would prefer to take the elevator with you instead of the stairs if you see he/she has trouble walking), it is appropriate to ask questions. Chances are, he/she has been asked about his/her disability repeatedly over his/her life and knows how to explain it in a few sentences. If the disability resulted from an accident or the client finds the information too personal, he/she will most likely answer that he/she prefers not to discuss it. Assuming you know what his/her disability is can be offensive; it is better to ask than to presume knowledge.



7 Recognize that some disabilities are not visible. Sometimes called "invisible disabilities," disabilities that cannot be immediately seen are still disabilities. For example, a client may have a brain injury that impacts his/her ability to remember information. Having a client forget to do something important is frustrating, but it is not appropriate for you to blame him/her for his/her mistake. A good habit to be in is to act kindly and considerately towards everyone; you can't know someone's situation by just looking at him/her.

Some disabilities vary from day to day: a client who needed a wheelchair yesterday might only need a cane today. This doesn't mean he/she is faking it or "getting better," just that he/she has good days and bad days like all other clients.

8 Acknowledge that most clients with disability have adapted. Some disabilities are present from birth, and others come later in life due to development, accident, or illness. However, as the disability develops, most people learn how to adapt, take care of themselves, and interact with the world independently. As a result, it can be offensive or annoying to assume that a client with a disability needs help or cannot contribute to a conversation in the same way as any other client.

- Don't avoid asking a client with a disability to do a certain task or participate in a conversation because you worry they can't accomplish it.
- If you do offer to help or make an accommodation, make the offer genuine and specific. If you are offering from a place of genuine kindness, and not an assumption that the person cannot do something, you're less likely to offend.

Summary

Speaking with clients who have a disability is no different from talking to any other clients. Remember:

1. Be respectful, above all else.
2. Never talk down to someone with a disability.
3. Don't use labels or offensive terms, especially in a casual way.
4. Speak directly to the person, not to an aide or translator.
5. Be patient and ask questions, if necessary.
6. Don't be afraid of asking about a person's disability.
7. Recognize that some disabilities are not visible.
8. Acknowledge that most clients with disability have adapted.

Appendix Q

Study 4 Module Evaluation Questions

1. The training module was easy to understand.
2. The training module was the appropriate length.
3. The information in this training module was useful.
4. The information in this training module was interesting.
5. Completing the training module made me feel comfortable interacting with people with disability.
6. Completing the training module increased my knowledge related to interacting with people with disability.
7. Completing the training module has changed the way I will interact with people with disability.

Items 1-7 had 6 response options with the end points labeled as: 1 = Strongly Disagree, 6 = Strongly Agree.

8. How likely would you be to recommend this training module to one of your friends?

This item had 6 response options with the end points labeled as: 1 = Not at All Likely, 6 = Very Likely.

9. Please provide any additional thoughts that you have about this training module.

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